



AMC501-T

Packing controller instruction manual



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This product complies with the following standards:

- GB/T 7724-2008 "Electronic Weighing Instruments" National Standard
- JJF1624-2017 "Digital Weighing Display (Weighing Indicator)" Type Evaluation Outline
- JJG649-2016 "Digital Weighing Display (Weighing Indicator)" Verification Regulation



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1. Basic Information

1.1 Features and Specifications

The AMC501-T is a single-channel quantitative ton packet controller based on Chinese/English touch screen, support rises、drop control、Conveyor control、gas flushing pouch and deflate.AMC501-T adopts high color TFT touch screen, which supports input and display. It has a beautiful graphical interface, reasonable functional classification and layout. All these excellent features make AMC501-T very easy to use.

AMC501-T packaging controller has the following basic features:

- Terminal TFT highlighted color touch screen, input in Chinese and English and display in Chinese and English
- Perfect process control function, bracket lift、bag and conveyor Control
- Distributor accumulates functions, Supports import and export via USB drive.
- Up to 100,000 packaging historical data storage features, Supports import and export via USB drive.
- Setup data support for native backup and USB export
- Weighing channel: single channel
- Working voltage: DC24V

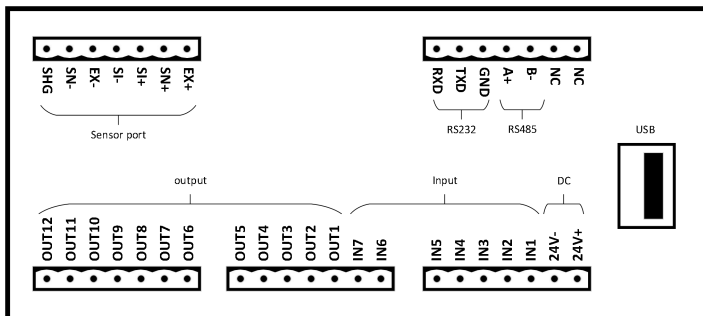
- Sensor: DC5V/4-wire and 6-wire system compatible
- Switch quantity: 7 input /12 output
- Installation method: cubicle outfit (Panel mounting)
- Volume:203×149×50 (Length * width * height , mm)

Detailed technical specifications are as follows:

Sensor Excitation	DC5V±10%/120mA drive current/can connect up to 8 sensors with 350Ω specification
Sensor Sensitivity	2mV/V or 3mV/V
Input Signal Range	0 ~ 15mV
Input Sensitivity	0.5uV/d
Non-linearity	0.02%FS (at 3mV/V)
Zero Drift	< 0.5μV/°C
Gain Drift	< 10PPM/°C
AD Conversion Rate	960 times/second
Maximum Display Resolution	1/100000
Product Accuracy Class	III
Operating Voltage	DC24V (18V ~ 30V compatible)
Power Consumption	< 5W
Operating Temperature	-10°C ~ 45°C
Storage Temperature	-20°C ~ 60°C
Humidity	Within 90%RH (no condensation)

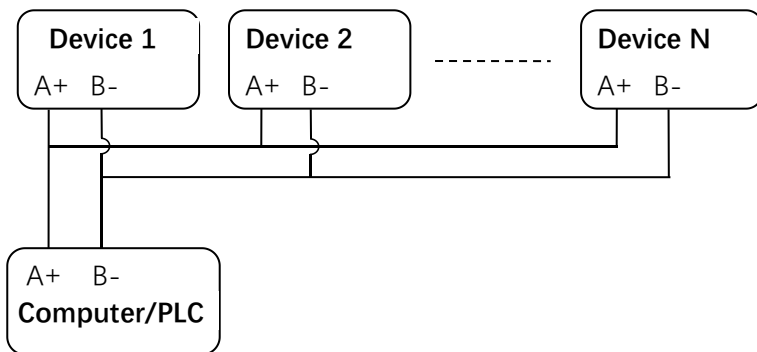
1.2 Wiring Ports

The wiring ports are shown in the following diagram:

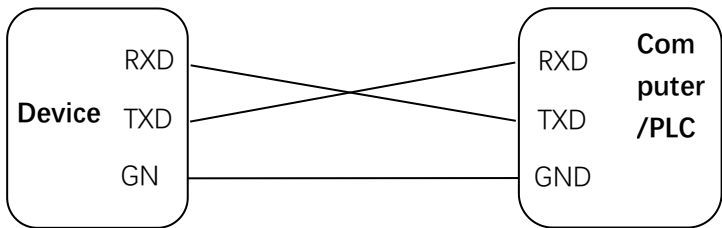


1.2.1 Serial Port Wiring Method

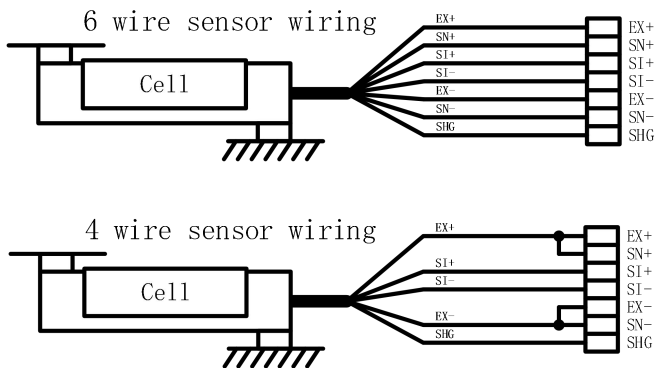
RS485 Wiring Diagram:



RS232 Wiring Diagram:

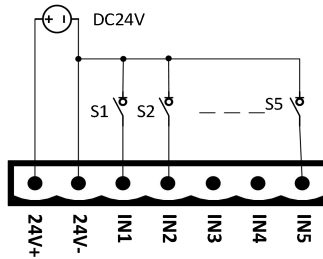


1.3 Sensor Wiring Method



1.4 Digital Input/Output Wiring Method

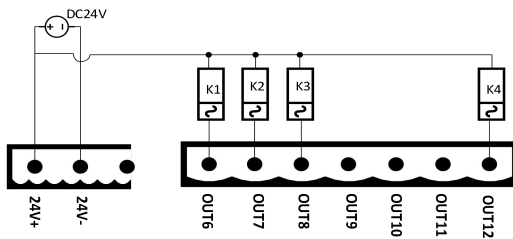
The wiring diagram for digital input is shown below (using IN1, IN2, and IN5 as examples):



External circuits driving digital inputs must meet two requirements:

1. The external circuit must share a common ground with the controller.
2. When the external circuit inputs a low level, it indicates a valid input; otherwise, it indicates an invalid input.

The wiring diagram for digital output is shown below (using OUT6, OUT7, OUT8, and OUT12 as examples):



External circuits driven by digital outputs must meet two requirements:

1. The external circuit must share a common ground with the controller.
2. When the digital output is valid, it outputs a low level.

Note: The maximum driving capacity of each digital output port is 500mA. Please pay attention to the load power when connecting. Exceeding the driving capacity may damage the digital output port.

1.4.1 IO default definition

The connection port (IO port is the initial defined value) is described as follows:

interface	instructions	interface	instructions
24V+	DC24V+	24V-	DC24V-
IO input			
IN1	I1. running	IN2	I2. stop
IN3	I3. Pause	IN4	I6. Clear alarm
IN5	I8. Clamp/unclamp	IN6	I9. hook on/off
IN7	I10. raise/fall		
IO output			
OUT1	Q1. running	OUT2	Q2. stop
OUT3	Q5. fast	OUT4	Q6. med
OUT5	Q7. fine	OUT6	Q8. Hold
OUT7	Q10. warning	OUT8	Q11. Clamp
OUT9	Q12. hook on	OUT10	Q13. Rising (air)
OUT11	Q20. inflate	OUT12	Q21. deflate
Sensor interface			
	Load Cell		Load Cell
EX+	Excitation+	EX-	Excitation-
SN+	Load Cell Sense+	SN-	Load Cell Sense-

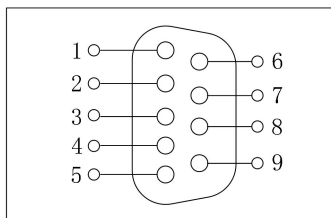
SI+	Load Cell Signal+	SI-	Load Cell Signal-
SHG	Load Cell Shielded Wire		

1.5 Expansion Board

1.5.1 IO Expansion Board

The controller can be equipped with switch expansion board, the interface form is DB9 type plug, can provide additional 4 in and 3 out switch interface, the controller can automatically identify the expansion board, when connected to switch expansion board, switch related function interface will automatically display the increased

The interface is defined as follows:

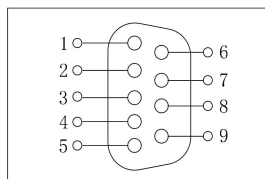


DB9 lead foot	Interface specification
NO.1 lead foot	IN8
NO.2 lead foot	IN9
NO.3 lead foot	IN10
NO.4 lead foot	IN11
NO.5 lead foot	OUT13
NO.6 lead foot	OUT14
NO.7 lead foot	OUT15
NO.8 lead foot	empty
NO.9 lead foot	empty

1.5.2 Analog Expansion Board

The controller can be optionally equipped with an analog expansion board with a DB9-type connector, providing one analog output interface. The controller can automatically recognize the expansion board and supports voltage or current output (specify voltage or current output when ordering).

For related details, refer to section 3.12 Analog.
Interface definition is as follows:



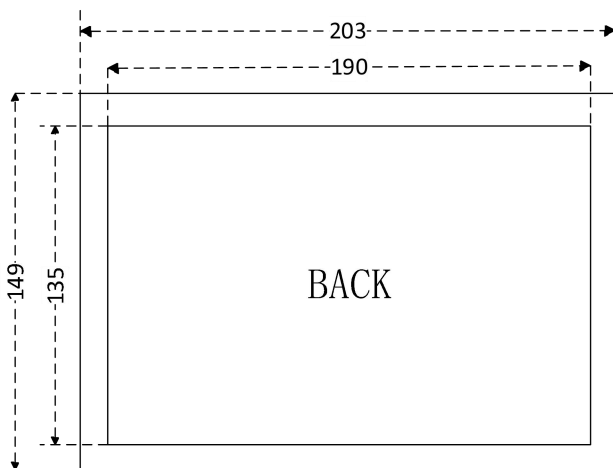
DB9 lead foot	Interface specification
NO.1 lead foot	AO-
NO.2 lead foot	empty
NO.3 lead foot	empty
NO.4 lead foot	empty
NO.5 lead foot	empty
NO.6 lead foot	empty
NO.7 lead foot	AO+
NO.8 lead foot	empty
NO.9 lead foot	empty

1.5.3 Network Port Expansion Board

The controller can be optionally equipped with a network port expansion board, supporting Modbus-TCP network communication.

For parameter details, refer to section 3.8.4 Network Port Settings.

1.6 Mounting Dimension

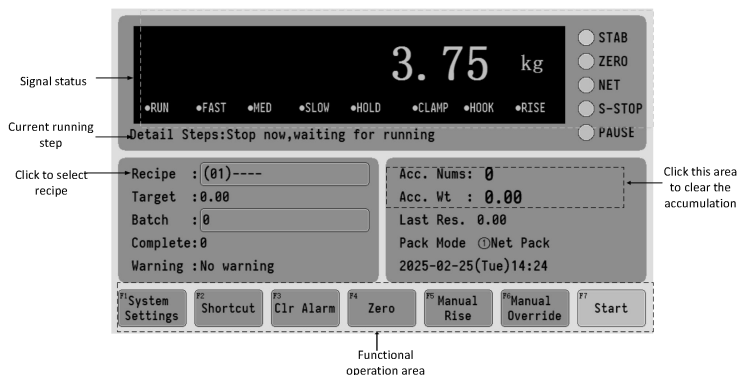


above is the bottom view of the product, data unit: mm

Recommended installation hole size: 192mm×138mm

2. Main Interface

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



The top column shows the current weight value, as well as status indicators such as weight stability, zero, etc , and the detailed running steps of the controller, The middle two columns show the following:

[recipe] The current recipe number and recipe name are displayed.

Click the display position of the formula number to enter the formula selection interface

[target] That is the target packaging weight of the current recipe used.

[Batch] The target requires the number of packages to be packed.

【complete】 The number of packages completed this time.

【warring】 Displays the current alarm contents.

【Acc. Wt】 The total weight of the finished packaging

【Acc, Nums】 Total number of packages completed

Click the **Clear** on the right to Clear the total accumulated data.

【Last res】 Last packaging results.

【Pack-mode】 Gross packing and net packing

At the bottom is the function button, which can set and operate some parameters. If the function button is in a grey state, it indicates that the function is not available (except for start running).

F1 System maintenance: The system maintenance page is displayed.

F2 Shortcut: The shortcut Settings screen is displayed.

F3 clr alarm When there is an alarm, click the button to clear the alarm.

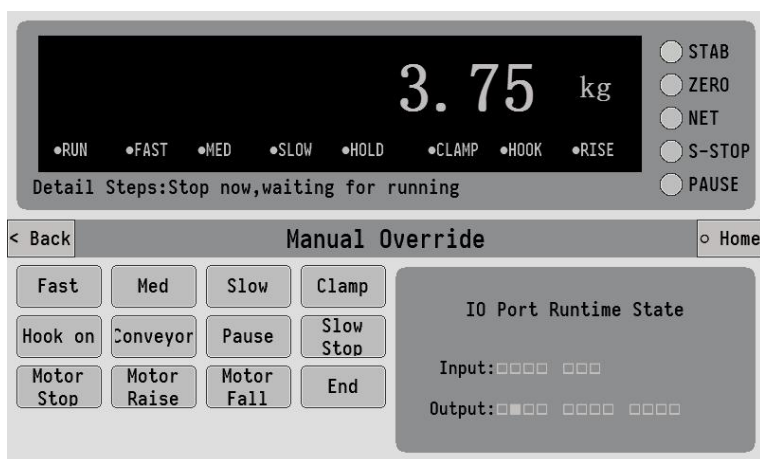
F4 zeroing Perform zero clearing for the current gross weight. When the button is gray, it means it is not available. For example, when running, it is gray.

F5 manual raise Click to manually control the rise and fall of the bracket.

F6 Manual control can manually control Fast、Med、Fine、hook on、Conveyor start stop and so on, and there is a IO real-time status display .It can operate pause or slow stop in running

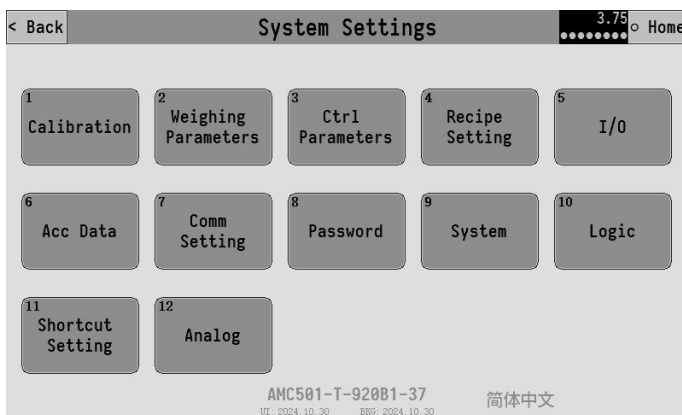
F7 start running The gray color indicates the stop state .click on the **F7 start running**, if no error is reported, the system will start the packaging workflow.

The interface is as follows:



3. System Maintenance

Click **F1 System setting** on the main interface to enter the system maintenance interface, As shown in the following figure : (Default administrator password :000000)



This screen lists all of the controller parameter Settings options

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

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

3.1. Weight Calibration

The weight of new equipment needs to be calibrated before use. And set the system's parameters such as display units、 decimal separator 、 Min scale mark and maximum range.

There are three ways of weight calibration, one of which can be chosen according to the actual situation.

(1) Wt Clb(Weight Calibration): Use weights or objects of known weight on the scale table for calibration.

(2) Material Clb(Material Calibration): Add material directly to weighing bag or weighing bucket, and then weigh the actual weight of material to calibrate.

(3) No-wt Clb(Calibration without weights): The voltage value and corresponding weight of direct input voltage value gain are calibrated.

3.1.1. Weight Calibration

The screenshot shows a menu titled "1.Wt Calib" with a "< Back" button on the left and a "Home" button on the right. On the left side of the menu, there are three options: "1.1 Wt Calib", "1.2 Material Clb", and "1.3 No-Wt Clb". The "1.1 Wt Calib" option is selected. The main area of the menu displays four parameters for calibration:

1.1.1	Unit	kg
1.1.2	Dec-Point	0.00
1.1.3	Min-Div	0.01
1.1.4	Max-Range	1000.00

On the right side of the menu, there is a digital display showing "Curr-Wt" and "0.00". Below the display, there are two buttons: "Zero Clb" and "Gain Clb".

The absolute voltage shown in the right column is the current voltage value of the sensor. The normal range of this value is 0~15mV, If the value exceeds this range, the signal of the weight sensor is abnormal, check whether the sensor is damaged or the line connection is reliable.

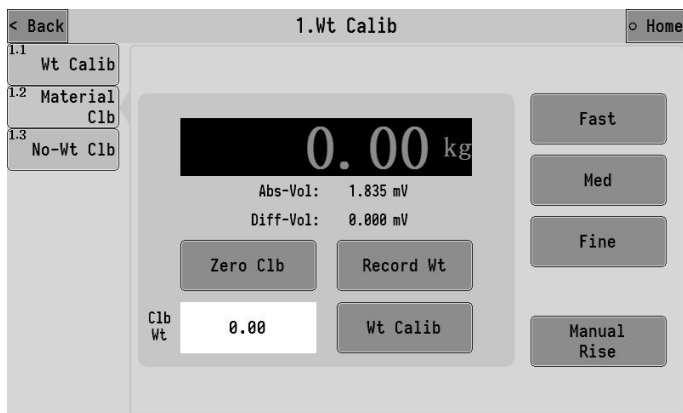
The relative voltage is the difference between the current absolute voltage and the voltage value at zero point, amount to the value of the voltage generated by the gain weight.

The calibration process can be completed only by two steps of zero calibration and gain calibration. The operation is as follows:

- (1) Empty the material, wait until the signal is stable (absolute voltage does not jump) click , success will be marked zero success prompt.
- (2) Put weights or objects of known weight on the weighing table, After the signal stabilizes (absolute voltage does not beat) click , the input box pops up, enter the exact weight of the object and click Ok, when successful, the calibration gain will be indicated.

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

3.1.2. Material calibration



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

- (1) Empty the scale, after the signal stabilizes (absolute voltage does not beat) click **zero Clb**, success will be marked zero success prompt.
- (2) Hang the bag on the hook and clamp the bag, Click **Manual Rise** to lift the packaging bag ,then can click **Fast**、 **Med**、 **Fine** can manually open and close the corresponding feeding device, add a certain amount of material to the package. After the signal stabilizes (absolute voltage does not beat), Click **record Wt** to record the weight signal at this time.
- (3) Then manually lowered the bracket ,take off the

package, put it on an accurate scale and weigh it against the weight of the package ,and click 【Wt Calib 】 input box, the actual weight of the packaging bag obtained by input weighing is the completion of the material calibration process.

3.1.3. Calibration Without Weights

The screenshot shows a software interface for weight calibration. At the top, there is a title bar with '< Back' on the left, '1.Wt Calib' in the center, and 'Home' on the right. On the left side, there is a vertical menu with three options: '1.1 Wt Calib', '1.2 Material Clb', and '1.3 No-Wt Clb'. The main area of the interface is divided into two sections. The top section contains a table with three rows of calibration parameters:

Item	Parameter	Value	Unit
1.3.1	Zero Vol	1.835	mV
1.3.2	Gain Vol	3.125	mV
1.3.3	Gain Wt	20.00	kg

Below the table, there is a large digital display showing '0.00'. To the right of the display is a button labeled 'Calib'.

In this interface, can separately enter zero voltage, voltage gain, gain weight position, click **Calib** to complete the weightless calibration process

3.2. Weighing parameters

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

< Back
2.Basic Wt Para.
o Home

2.1
Basic WT

2.1.1	Zero Range	0	d
2.1.2	Zeroing Range	10	%
2.1.3	Stable Range	2	d
2.1.4	Stable Time	0.8	s
2.1.5	Filter Grade	5	
2.1.6	Powerup Zeroing	OFF	
2.1.7	Power Off Save	ON	

Parameter description list:

2.1.1	zero range	It only works in the stopped state, when the weight value stabilizes within the positive and negative range of the set $\times d$ (minimum dividing value), it will automatically clear to zero.
2.1.2	zeroing range	When performing the zeroing operation, the weight must be less than or equal to "maximum range * zero range"
2.1.3	Stable range	These two parameters work together to determine whether the weight is stable, If the difference between the maximum value and the minimum value is less than or equal to the stability range, then the weight value is considered stable at this time.
2.1.4	Stable time	

2.1.5	Filter grade	Software digital filtering intensity level, according to the actual debugging effect of the equipment to set the appropriate filtering level parameters 0: The filtering effect is the weakest, the weight response is fast, and the anti-vibration effect is poor. 9: The filtering effect is the weakest, the weight response is fast, and the anti-vibration effect is poor
2.1.6	powerup zeroing	After being turned on, the controller will automatically reset every time it is turned on.
2.1.7	Power off save	After startup, if the power is accidentally dropped during operation, the controller will automatically save the parameters such as the tare of this operation. The next time the device is turned on, the upper left corner of the display screen will indicate "power down save", indicating the current data saved by power down. At this point, the "start" signal can be given to start the meter. The meter will be automatically peeled according to the lost electricity saved leather weight and continue the last feeding process. If you want to refill, you can also give the "stop" signal to clear out the power to save data, and then "start" the refueling again.

3.3. Ctrl parameters

Click the button **3.Ctrl Parameters** the system maintenance interface to enter the setting interface of Tons-pack ctrl-para set ting, Follow functional and control procedures put parameters divided into 8 categories.

3.3.1. Clamp and hook

It can set the relevant functional parameters of bag and hook control.

< Back		3.Ctrl Para.		o Home	
3.1	Clamp/Hook	3.1.1	Clamp Delay Time	0.5	s
3.2	Lift Table	3.1.2	Delay Before Auto Unclamp	0.5	s
3.3	Inflate	3.1.3	Clamp Ctrl When Stop	(1)Ignore	>
3.4	Feed Process	3.1.11	Unclamp Judgement	(1)Under Near Zero	>
3.5	Flap Bag	3.1.4	Hook Delay Time	0.5	s
3.6	Fixed Process	3.1.5	Delay Before Auto Hook Off	0.0	s
3.7	Conveyor	3.1.6	Hook Output Type	(1)Positive	>
3.8	Material Level	3.1.7	Hook Ctrl When Stop	(1)Ignore	>
		3.1.8	Hook Off Judgement	(1)Under Near Zero	>
		3.1.9	Auto Hook On	OFF	
		3.1.10	Auto Hook On Delay Time	3.0	s
IO Config					

Function parameters of bagging:		
3.1.1	clamp delay time	After the signal of "clamp bag" is input, the action of "clamp bag" is considered to be completed after the

		delay of this time, it can continue the following process.
3.1.2	delay before auto unclamp	When the judgment condition of unclamp bag is reached in running, start to unclamp the bag after delay.
3.1.3	Clamp ctrl when stop	1.[Ignore]: After the stop signal is valid, the controller does not change the current clamping mechanism state. 2. [unclamp]: After the stop signal is effective, clamping mechanism resumes the unclamp state 3. [clamp]: After the stop signal is effective, the clamping mechanism returns to the bag-clamping state
Hook function parameters		
3.1.4	hook delay time	After the "hook" signal is input, the action of the hook is considered to be completed after the delay of this time, it can continue the following process.
3.1.5	delay before auto hook off	After the decoupling judgement condition is reached, the decoupling begins after this time delay.
3.1.6	hook output type	1.[Positive]: Hook output signal when valid hook, invalid decoupling

		2.[Negative] Hook output signal is valid when decoupling, invalid hook
3.1.7	hook ctrl when stop	1.[ignore]: When the stop signal is valid, the controller does not change the current state of the hook mechanism. 2. [hook off]: After the stop signal is effective, the hook mechanism resumes the decoupling state. 3. [hook on]: After the stop signal is valid, the hook mechanism is restored to the hook state.
3.1.8	hook off judgement	1. [under near zero]: After the packaging is completed and the bracket begins to drop, the automatic bag release and decoupling will be started if the current weight is lower than the set "zero zone value". 2. [lift table fall end]: When the packing is completed and the brackets are lowered, the bag will be unpacked and unhooked automatically. 3.[manual]: Packaging is complete, after the bracket descends, wait for

		manual input "I9 hook on/off" signal before detaching.
3.1.9	auto hook on	When the function turns on, 【3.1.10 auto hook on delay time】 will be started to delay after decoupling, and the hook signal will be automatically output after the delay time reaches.
3.1.10	auto hook on delay time	
3.1.11	Unclamp judgment	1.[under near zero]: Began to decline after the packaging complete, stents, detect if the current weight is below the set of "zero value", began to unclamp bag automatically. 2.[lift table fall end]: Packaging is complete, after the stent decline, began to unclamp bag automatically. 3.[manual]: Packaging is completed, after the stent decline, wait manual input "I8 clamp/unclamp" signal to unclamp bag.

Click **IO config** the bottom right of the interface, can enter the IO input and output signal configuration interface related to the hook function ,the corresponding input and output functions can be directly and quickly defined on the corresponding switch port.

For example, define the clip/unclamp input signal above the IN5 input IO, Click options, select IN5 from the popup options screen. After this operation and entering the IO input definition interface, For example, define the “clip/unclamp” input signal above the IN5 input IO, Click options, select IN5 from the popup options screen. After this operation and entering the IO input definition interface, The effect of defining the IN5 function as the “clip/unclamp” input signal is the same

Each of the following control parameters has a corresponding IO configuration interface, which will not be described one by one。

3.3.2. Bracket lift

Control the parameters related to the rise and fall of the weighing support.

< Back		3.Ctrl Parameters		3.75	Home
3.1	Clamp/Hook	3.2.1	Lift Table Ctrl Mode ☐ Air	3.2.6	Lift Table Auto ☐ Auto Rise ☐ Auto Fall
3.2	Lift Table	3.2.2	Rise Time 5.0 s	3.2.7	Delay Before Auto Rise 0.5 s
3.3	Inflate	3.2.3	Fall Time 5.0 s	3.2.8	Delay Before Auto Fall 0.5 s
3.4	Feed Process	3.2.4	Rise Timeout 8.0 s	3.2.9	Lift Table Ctrl When Stop ☐ Ignore
3.5	Flap Bag	3.2.5	Fall Timeout 8.0 s	3.2.10	Lift Table Motor Reset Startup ON
3.6	Fixed Process				
3.7	Conveyor				
3.8	Material Level				
IO Config					

3.2.1	Lift table ctrl mode	1.[air]: The lifting of the support is controlled by pneumatic signal. The support rises when the "rising (air)" is effective. 2.[motor double limit]: The lifting and lowering of the bracket is controlled by electric signals, and the upper and lower limit signals are required to input to the controller to determine whether the bracket is rising or falling in place. 3.[air double limit]: The lifting of the support is controlled by pneumatic signal. The support rises when the "rise(air)" is effective, and falls when the "rise(air)" is invalid. And the upper and lower limit signals need to be input to the controller to determine whether the bracket is up and down in place.
3.2.2	Rise time	After the rise(air) is effective, the bracket begins to rise, and after this time, it is considered that the bracket has finished rising, so it can enter the next process.
3.2.3	Fall time	After the rise(air) output is invalid, the bracket begins to decline. After this time, it is considered that the bracket has finished its descent and can enter the next process.

3.2.4	Rise timeout	The bracket rise, and after this time, no upper limit signal of the bracket has been detected to be effective, then it is considered that the bracket goes through a timeout and gives an alarm. Note: the timeout alarm is turned off when the timeout is set to 0.
3.2.5	Fall timeout	The bracket decline, and after this time, the lower limit signal of the bracket has not been detected to be effective. Then, it is considered that the bracket goes into a timeout and gives an alarm. Note: the timeout alarm is turned off when the timeout is set to 0.
3.2.6	Lift table auto	1. [closed]: After the controller starts and the clamp and hook action is completed, the "lift/drop support" signal needs to be manually entered, and the support will rise and complete the following process. After the packaging is completed, the "lift/drop support" signal needs to be manually entered , the support will drop and complete the following process. 2.[Auto rise auto fall]: After the controller starts, the bracket will start to rise automatically when the clamp and hook action are

		detected to be completed, and start to fall automatically after the packaging is completed. 3.[Auto rise manual fall] After the controller is started, when it is detected that the clamp and the hook action are all completed, the bracket will start to rise automatically. However, after the packaging is completed, the bracket cannot fall automatically need to manually entered "lifting/dropping bracket" signal to drop the bracket. 4.[Manual rise auto fall] After the controller starts, when it is detected that the clam and hook action are all completed, the bracket needs to manually input the "lifting/dropping bracket" signal, the bracket will rise. After the packaging is completed, the bracket will automatically start to fall.
3.2.7	Delay before auto rise	When the automatic rising function of bracket is turned on, after the action of bagging and hook is completed, the bracket starts to rise automatically after this time.
3.2.8	Delay before auto	When the automatic descent function of the bracket is on, the feed is completed

	fall	and the bracket begins to descend automatically after this time.
3.2.9	Lift table ctrl when stop	1.[ignore]: After the stop signal is effective, the controller does not change the current state of the support mechanism. 2. [fall]: After the stop signal is effective, the support mechanism reverts to the descending state 3. [rise]: After the stop signal is effective, the support mechanism reverts to the rising state.
3.2.10	Lift table motor reset startup	[On]: Enables the electric support to automatically reset to the lower limit after power-on. [Off]: Disables this function.

3.3.3. Inflatable and return air

The parameters related to packaging bag inflation and return air function can be set to inflate the bag before the packaging begins, and the return air valve can be opened after the completion of inflation to remove the air inside the bag during feeding.

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3.Ctrl Para.
Home

3.1 Clamp/Hook

3.2 Lift Table

3.3 Inflate

3.4 Feed Process

3.5 Flap Bag

3.6 Fixed Process

3.7 Conveyor

3.8 Material Level

3.3.1 Inflate Func SW OFF

3.3.2 Inflate Start (1)Rise Start >

3.3.3 Inflate Time 4.0 s

IO Config

3.3.1	Inflate Func SW	[on]: Fill the bag with air before opening the package and open the return air valve after filling. [off]: Close the function.
3.3.2	Inflate start	1. [rise start]: The filling process begins when the ascent begins. 2.[rise end]: The filling process begins at the end of the ascent.
3.3.3	Inflate time	Set the duration of the output of the "inflate" signal. After the inflation, the "deflate" signal will start to be output, and the "deflate" signal will be invalid until the end of feeding.

3.3.4. Feeding process

Set the related parameters of each function in the feeding process.

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3.Ctrl Para.
Home

3.1 Clamp/Hook

3.2 Lift Table

3.3 Inflate

3.4 Feed Process

3.5 Flap Bag

3.6 Fixed Process

3.7 Conveyor

3.8 Material Level

3.4.1	Pack Mode (1)Net Pack >	3.4.4	Fast No-Cmp Time 0.5 s
3.4.2	Feed Mode (1)Combination >	3.4.5	Med No-Cmp Time 1.0 s
3.4.3	Delay Before Feed 0.5 s	3.4.6	Fine No-Cmp Time 1.0 s

IO Config

3.4.1	Pack mode	1. [net pack]: Before feeding, make sure to remove the skin and start feeding. 2. [Gross pack]: Do not remove the leather before feeding, and start feeding directly.
3.4.2	Feed mode	1.[combination]: fast: The output of fast, moderate and fine signal is effective medium: Moderate and fine signal output is effective Fine: small signal output effective. 2.[Independent]: fast: effective in large output signal. medium: feed signal output effective. fast: time small signal output effective.
3.4.3	Delay before	The delay time before the start of feeding is completed.

	time	
3.4.4	fast no-cmp time	The vibration elimination time at the beginning of the fast feeding, during which the fast feed signal is always valid and not affected by the weight. After the time, it will be judged whether the weight reaches the amount before the fast feeding and thus ends the fast feeding.
3.4.5	med no-cmp time	The vibration elimination time at the beginning of the moderate feeding, during which the moderate feeding signal is always valid and not affected by the weight. It is not until the end of the time that the weight reaches the lead amount of the moderate feeding to end the moderate feeding.
3.4.6	fine no-cmp time	The vibration elimination time at the beginning of the fine feeding, during which the fine throw feeding is always effective and does not be affected by the weight.

3.3.5. Flap bag

Set the related parameters of the bagging function.

< Back		3.Ctrl Para.		o Home	
3.1	Clamp/Hook	3.5.1	Flap Func SW OFF	3.5.2	Flap Output Ctrl ⁽¹⁾ Rise/Fall >
3.2	Lift Table	3.5.3	Flap On Time 5.0 s	3.5.4	Flap Off Time 5.0 s
3.3	Inflate	3.5.5	Flap Times When Feed 1 1	3.5.6	Weight Start Flap 1 0.00 kg
3.4	Feed Process	3.5.7	Flap Times When Feed 2 0	3.5.8	Weight Start Flap 2 0.00 kg
3.5	Flap Bag	3.5.9	Flap Times When Feed 3 0	3.5.10	Weight Start Flap 3 0.00 kg
3.6	Fixed Process	3.5.11	Feed Pause When Flap OFF	3.5.12	Weight Stop Flap 0.00 kg
3.7	Conveyor	3.5.13	Flap Times After Fixed 0	3.5.14	Delay Before Flap Start 0.5 s
3.8	Material Level				
IO Config					

3.5.1	Flap func SW	The main switch of pat function. 1.OFF;2 ON;3 Ctrl by Rec para
3.5.2	Flap output ctrl	To set the function to be controlled when shooting the bag: 1. [Bracket lift]: In the process of bagging, direct control of the lifting of the bracket to achieve the goal of bagging. 2. [Clamp bag signal]: The bagging process outputs the bagging signal to control the separate bagging mechanism for bagging. 3. [Bracket lifting and bagging signals]: In the process of bagging, the

		signal of bagging is also output while the control bracket is lifting. Note: if the bagging process is not completed in the feeding process, the bagging process will be forced to end, so as to prevent the bagging action from affecting the feeding accuracy.
3.5.3	Flap on time	In the process of bagging, the effective time of the signal output of bagging.
3.5.4	Flap off time	In the process of bagging, the invalid time of the signal output of bagging.
pat times in feed function		
3.5.5	Flap times when feed 1	Set the number of times you need to beat the bag the first time during the feeding process.
3.5.6	weight start flap 1	When the feeding weight reaches the set weight, the first feeding beat bag will be triggered.
3.5.7	Flap times when feed 2	Set the number of times to beat the bag for the second time during the feeding process.
3.5.8	weight start flap 2	When the feeding weight reaches the set weight value, the second feeding pat will be triggered.

3.5.9	Flap times when feed 3	Set the number of times to pat for the third time during the feeding process.
3.5.10	weight start flap 3	When the feeding weight reaches the set weight value, the third feeding pat will be triggered.
3.5.11	Feed pause when flap	1.[ON]: Not feed when pat. 2.[OFF]: Feed when pat.
3.5.12	Weight stop flap	If this parameter is not set to 0, the feeding weight reaches the set weight value to end the beating bag during the feeding process; if it is set to 0, this function does not work.
Fixed after pat		
3.5.13	Flap times after fixed	Set the number of times to beat the bag after the feeding is completed.
3.5.14	Delay before flap start	Feed end , the delay time before the end of feeding and the start of the fixed value after beating bag function.

3.3.6. Fixed process

Set the related functional parameters of the process of setting the values after the feeding is completed.

< Back		3.Ctrl Para.		o Home	
3.1 Clamp/Hook	3.6.1 Fixed Keep Time	1.0	s	3.6.7 Fall Correct SW	OFF
3.2 Lift Table	3.6.2 Fixed Need Stab SW	OFF		3.6.8 Fall Correct Times	1
3.3 Inflate	3.6.3 Ove/Und Check Func	OFF		3.6.9 Fall Correct Range	10.0 %
3.4 Feed Process	3.6.4 Over Value	0.00	kg	3.6.10 Fall Correct Depth	25% >
3.5 Flap Bag	3.6.5 Under Value	0.00	kg		
3.6 Fixed Process	3.6.6 Ove/Und Pause SW	OFF			
3.7 Conveyor					
3.8 Material Level					

IO Config

3.6.1	fixed keep time	At the end of feeding, the functions such as result accumulation, error detection and error correction will be performed after waiting for this time.
3.6.2	fixed need stab SW	1. [ON]: At the end of the holding period, the weight needs to be stable for the next flow. 2.[OFF]: At the end of the holding time, the weight does not need to be stable to enter the next process.
over/under detect function		
3.6.3	ove/und check func	Master switch for ove/und detect-func

		1. [on]: The feeding results will be ove/und test-time tested after each feeding. 2. [off]: No fall and over/under detection is performed. fall and over/under is the general term for overbalance or underbalance. In the packaging process, if the packaging result is higher than a certain range of the target value, it is considered to be out of tolerance, while if it is lower than a certain range, it is considered to be under tolerance, which is set according to the production demand.
3.6.4	over value	In the ove/und detect, if the weight result is $> \text{target value} + \text{excess value}$, it is judged to be out of tolerance.
3.6.5	under value	In the ove/und detect, if the weight value $< \text{target value} - \text{under value}$, it will be judged as under difference.
3.6.6	ove/und pause SW	When both the overbalance alarm switch and the overbalance suspension switch are on, if there

		is an over/under error, the controller will give an alarm and wait for the user to deal with it. At this point, the controller will continue to run after "clear the alarm", or it can give a "stop" signal to return to the stop state for processing.
In some cases, it may be necessary to use the drop correction function to improve the packaging accuracy. The drop correction function is to constantly revise the small drop value during the operation. The principle is as follows: 1. Target difference = the weight result -- target value 2. Target difference average = (target difference 1 + target difference 2 +... + target drop correction times)/drop correction times; 3. New small throw head = the last small throw head + the average of the target difference x the drop correction range;		
3.6.7	Fall correct SW	Main switch, for drop correction function. 1.[ON]: The fine feed is calculated and corrected automatically after feeding. 2.[OFF]: No drop correction.

3.6.8	Fall correct times	The average value obtained by averaging the drop value of the set number is taken as the basis of the drop correction
3.6.9	Fall correct range	The percentage of the target value, when this drop exceeds the set range, this drop will not be included in the arithmetic average range
3.6.10	Fall correct depth	Press the orange red button for 25%, 50%, 100% optional, the range of each drop correction.

3.3.7. Conveyor control

Set related function parameters of conveyor control.

The controller supports the control of two section conveyor functions (conveyor 1 and 2). When starting, conveyor 1 and 2 will start to run at the same time. When the running time of conveyor 1 reaches the end, conveyor 2 will automatically stop. When the input of "Conveyor 2 in place signal" is detected to be valid, conveyor 2 will stop.

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3.Ctrl Para.

Home

3.1 Clamp/Hook

3.2 Lift Table

3.3 Inflate

3.4 Feed Process

3.5 Flap Bag

3.6 Fixed Process

3.7 Conveyor

3.8 Material Level

3.7.1 Conveyor Ctrl Func SW OFF

3.7.2 Conveyor Auto Start SW OFF

3.7.3 Delay Before Conveyor Start 1.0 s

3.7.4 Conveyor1 Running Time 5.0 s

3.7.5 Conveyor2 Func SW OFF

3.7.6 Conveyor2 Timeout 0.0 s

3.7.7 Hook Off Failed Alarm OFF

3.7.8 Failed Alarm Weight Check 0.00 kg

3.7.9 Alarm Conveyor1 BW time 0.0 s

3.7.10 Prevent Hook lift Rise SW OFF

3.7.11 Prevent Hook Lift Rise Time 5.0 s

I/O Config

3.7.1	conveyor ctrl func SW	Master switch of conveyor control . 1.[ON]: Conveyor control is opened. 2. [OFF]: The conveyor control is closed and the corresponding IO input and output of the conveyor are invalid.
3.7.2	Conveyor auto start SW	1.[ON]: Automatic start conveyor after loosening bag and decoupling is completed. 2.[OFF]: The start and stop of the conveyor is completely controlled manually. It can customize "conveyor start stop" or "conveyor start stop & hang/hook" signal to control the conveyor action.

3.7.3	delay before conveyor start	After the bag release and decoupling are completed, the conveyor will start to run after this delay time.
3.7.4	conveyor 1 running time	The duration of the forward turning signal output of conveyor 1, after which the transmission process of conveyor 1 is considered to have been completed.
3.7.5	Conveyor 2 func	1.[ON]: Conveyor 2 function open. 2.[OFF]: Conveyor 2 function closed.
3.7.6	conveyor 2 timeout	If the time is not set to 0, the conveyor 2 will be forced to stop after continuous operation for longer than this time.
inadequacy alarm function		
3.7.7	Hook off failed alarm	1.[ON]: If the hook is not fully decoupled, the bag hangs the hook, and the conveyor will pull the weighing bracket to increase the weight. After the positive rotation signal of the conveyor is started, the controller detects the weight of the conveyor when it is running. If the weight is increased more than the set value when the conveyor starts, the

		alarm will be sent and the conveyor will be stopped. 2.[OFF]: Decoupling incomplete alarm detection is not performed.
3.7.8	Failed alarm weight check	If the weight is increased more than the set value when the conveyor starts, the alarm will be sent and the conveyor will be stopped.
3.7.9	Alarm conveyor 1 BW time	If the time is not set to 0, after decoupling the alarm, the controller will control the conveyor 1 to reverse and last the time.
Bracket rising anti - hook function In order to prevent the bag hanging to the weighing bracket when the conveyor is running after decoupling, When the support lifting and anti-hook function is opened, the controller will control the support to carry out lifting action before the conveyor starts. Keep the bracket away from the bag, After the lifting process goes through the set time for the bracket to rise and prevent hook, then the conveyor is started to carry the bag away, and then the bracket begins to drop.		
3.7.10	Prevent hook lift rise SW	1.[ON]: The bracket lifting anti - hook function is on. 2.[OFF]: Bracket lift anti - hook function is closed.

3.7.11	Prevent hook lift rise time	Before the conveyor starts, the bracket rises first and after this time, the conveyor starts again.
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3.3.8. Level setting

Set the level gauge input and feed related functional parameters.

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3.Ctrl Parameters

3.75 Home

3.1 Clamp/Hook

3.2 Lift Table

3.3 Inflate

3.4 Feed Process

3.5 Flap Bag

3.6 Fixed Process

3.7 Conveyor

3.8 Material Level

3.8.1 Material Level Type ☐ None >

3.8.2 Supply Trigger ☐ Off >

3.8.3 Supply Delay On Time 0.0 s

3.8.4 Supply Delay Off Time 3.0 s

3.8.5 Supply Work Time ☐ Run & Stop >

3.8.6 Signal In Debounce Time 0.50 s

IO Config

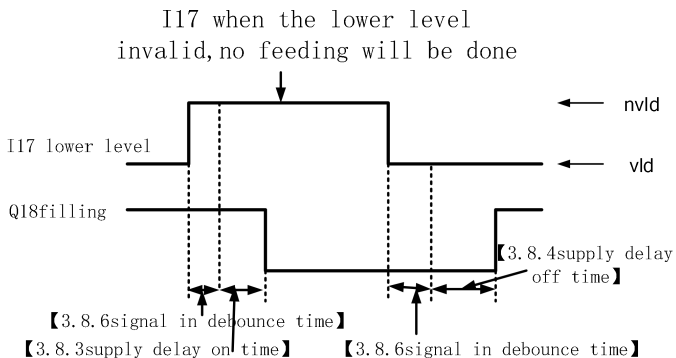
3.8.1	Material level type	1.[None]: No level gauge. 2.[only lower]: There is one level sensor (lower level). 3.[Upper and lower]: There are 2 levels (upper and lower). 4.[only upper]: There is one level sensor (upper level). Note: If the mode containing the blanking level is selected, feeding will
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		not start if the blanking level signal input is invalid.
3.8.2	Filling trigger	1.[OFF]: Turn off the feed output function. 2.[lower trigger]: lower trigger feeding function when the lower level input is invalid. 3.[Upper trigger]: Upper trigger feeding function when the upper level input is invalid. Note: When the lower level mode is set to [upper and lower feed], the feed function will continue until the lower level signal is effective.
3.8.3	Filling delay on time	After the filling function is triggered, the supply fill signal will be output after the delay of this time.
3.8.4	Filling delay off time	After the end of supply fill signal output should be closed after the delay of this time.
3.8.5	Filling work time	1.[Run & stop]。 2.[only run]。
3.8.6	Signal in debounce time	0.0~9.99s, The debounce time for the "I16. Upper Level" and "I17. Lower Level" signal inputs. The signal is considered valid after being continuously valid for this duration;

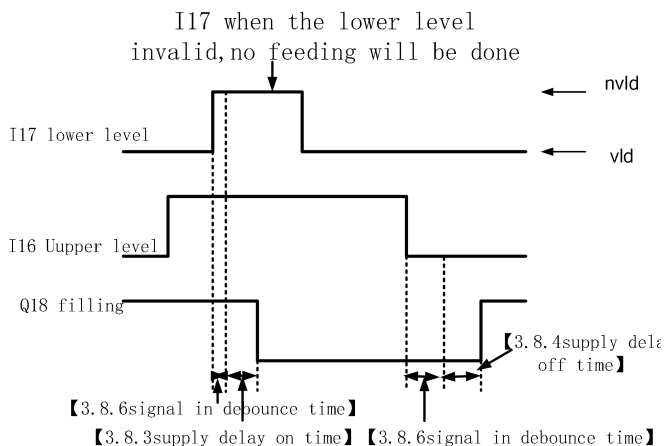
		The signal is considered invalid after being continuously invalid for this duration. Prevents interference caused by occasional instantaneous signal interruptions or conduction.
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3.3.8.1 Detailed Description Of Filling

1. Material level mode: only lower;
Feeding trigger: lower trigger.
The sequence diagram is as follows:



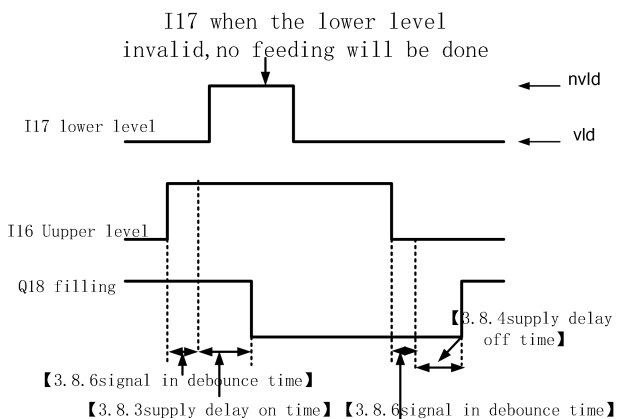
2. Material level mode: upper and lower;
Feeding trigger: lower trigger.
The sequence diagram is as follows:



3. Material level mode: upper and lower;

Feeding trigger: upper trigger.

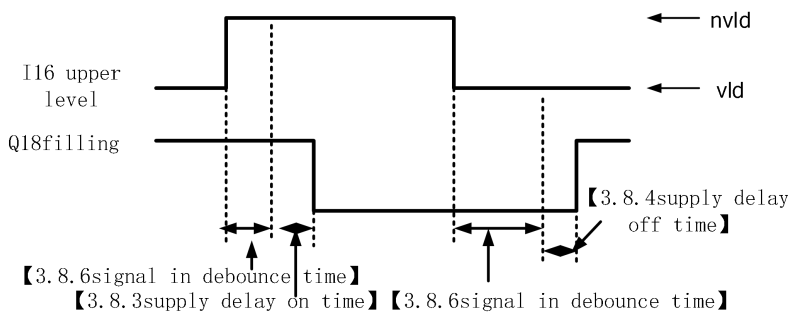
The sequence diagram is as follows:



4. Material level mode: only upper;

Feeding trigger: upper trigger.

The sequence diagram is as follows:



3.4. Recipe parameters

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

3.4.1. Recipe number

The screenshot shows a user interface titled "4.Recipe". At the top left is a "< Back" button and at the top right is a "Home" button. On the left side, there is a vertical menu with two items: "4.1 Rec Number" and "4.2 Target". The main area of the interface contains three sub-sections: "4.1.1 Rec Number" with a text input field containing the value "1"; "4.1.2 Choose Enable" with a toggle switch currently set to "ON"; and "4.1.3 Name" with a text input field containing four dashes "----".

4.1.1	Rec number	Sets the currently used recipe number.
4.1.2	Choose enable	After it is opened, when the recipe number is selected by clicking the recipe number position on the main interface, the recipe will be in an optional state.
4.1.3	Name	The name of the formula can be entered for easy memory. After setting, the corresponding recipe name will be displayed in the recipe number position on the main interface.

3.4.2. Target

This interface sets the target value of the formula number and other formula parameters.

Item	Label	Value	Unit
4.2.1	Target	2.00	kg
4.2.2	Fast Feed	0.00	kg
4.2.3	Med Feed	0.00	kg
4.2.4	Slow Feed	0.00	kg
4.2.5	Zero Area	0.50	kg
4.2.6	Tare Value	0.00	kg
4.2.7	Tare Error Value	0.00	kg

4.2.1	Target	Set the target weight for the package.
4.2.2	fast feed	When feeding ,the weight value≥ target -fast feed, close the fast feeding;
4.2.3	med feed	When feeding ,the weight value≥ target -med feed, close the moderate feeding
4.2.4	Fine feed	When feeding ,the weight value≥ target -fine feed, close the fine feeding
4.2.5	Near zero	When 【3.1.8 the judgment condition of unclamp bag and decoupling】 is set as "lower than zero area value", it is

		used to judge the start of loose bag and decoupling action.
4.2.6	Tare Value	These two parameters are used to determine the tare range.
4.2.7	Tare Error Value	Tare Range = [4.2.6 Tare Value] $\pm$ [4.2.7 Tare Error Value]. Before starting the feeding process, if the current weight is not within the tare range, the tare function will not be performed, and a prompt "Tare out of range, cannot tare." will be displayed. Note: If both [4.2.6 Tare Value] and [4.2.7 Tare Error Value] are set to 0, the tare range detection function is disabled, and any weight can be tared.

3.4.3.Flaping bag

Set the relevant parameters for flaping bag.

Relevant Parameters in Section 3.3.5

Note: When the [3.5.1 flaping Func SW] parameter is set to [3. Ctrl Parameters], the relevant parameters in this interface will take effect. Otherwise, the bag tapping function will be controlled by the parameters in the [3.5 flaping bag] interface.

3.4.4.Feed Analog

The analog output function needs to be equipped with the analog output extension.

When the controller is equipped with analog expansion, analog output can be used to control feeding, fast, med and fine can be corresponding to three analog size, to achieve analog control frequency converter or vibration feeder output voltage, feeding different material speed.

The screenshot shows a control interface titled "4.Recipe Setting". At the top left is a "< Back" button, and at the top right is a "3.75 Home" button. On the left side, there is a vertical menu with four items: "4.1 Recipe", "4.2 Target", "4.3 Flap Bag", and "4.4 Feed Analog", with "4.4 Feed Analog" being the selected item. The main area of the screen displays three settings, each with a label, a numerical value in a box, and a unit "%":
4.4.1 Large Feed Analog 0.000 %
4.4.2 Med Feed Analog 0.000 %
4.4.3 Slow Feed Analog 0.000 %

4.4.1	Large Feed Analog	0.000~100.000% The size of the analog output at large input.
4.4.2	Med Feed Analog	0.000~100.000% The size of the analog output at med input.
4.4.3	Fine Feed Analog	0.000~100.000% The size of the analog output at fine input.

Note: The analog output percentage set here is related to **【12.1.1 Analog output range】** Settings, for example:

【12.1.1 Analog output range】 set to 0~5V

【4.4.1 Large Feed Analog】 set to 80.000%

【4.4.2 Med Feed Analog】 set to 40.000%

【4.4.3 Fine Feed Analog】 set to 10.000%

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

3.5. IO

The functions corresponding to the input and output of switching variables can be defined. And the IO test function can be used to test whether the external switching volume circuit is normal.

3.5.1. IN Def.

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



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

number	Function name	describe
I0	None	No functional definition.
I1	Running	Start running.
I2	Stop	Stop running.
I3	Slowly stop	Enter the slow stop process, that is, after the completion of this packaging automatically stop running.
I4	Pause	Pause the operation. You can continue after you give the start signal again.
I5	Zeroing	Perform a zeroing operation.
I6	Clear alarm	Clear the alarm status.
I7	Change Rec.	Valid once, automatically switches to the next recipe with a non-zero target

		value.
I18	Clip/Unclamp	Clamp/unclamp operation input signal.
I19	Hook on/off	Hook on/hook off input signal.
I110	Raise/fall	The lift/drop support operates the input signal.
I111	manual fine	Turn slow on when it's active, turn slow off when it's active again.
I112	manual med	Turn med on when it's active, turn med off when it's active again.
I113	manual fast	Turn fast on when it's active, turn fast off when it's active again.
I114	Clr Total Acc	Clear the total accumulative data.
I115	Clr Rec Acc	Clears the current recipe backlog data.
I116	Upper level	Up feeding level detects input signal. When effective, it is considered that the material has reached the loading level.
I117	Lower level	Blanking level detects input signal. When effective, it is considered that the material has reached the cutting level. When invalid, it is considered that the material is lower than the cutting and is in the state of material shortage.

I18	Raise limit	Upper bracket input signal. When effective, the bracket is considered to have run to the upper limit position.
I19	Fall limit	Lower bracket input signal. When effective, the bracket is considered to have run to the lower limit position.
I20	Running/Stop	Start running when valid. Stop running when invalid.
I21	Running/slowly stop	Start running when valid. When invalid, enter the deferment process.
I22	Running/pause	Start running when valid. Enter the suspended state when invalid.
I23	manual fine(lvl)	Open the fine when it is valid, close the fine when it is invalid.
I24	manual med(lvl)	Open the med when it is valid, close the med when it is invalid.
I25	manual fast(lvl)	Open the fast when it is valid, close the fast when it is invalid.
I26	Clamp OK	This signal can be used when the clamp device has in place switch detection. When effective, it is considered that the clamp action has been completed.
I27	Conveyor start	The conveyor starts when effective, and stops when effective again.
I28	Conveyor & Hook on/ off	It is equivalent to giving "conveyor start stop" signal and "Hook on/off"

		signal at the same time
I29	Conveyor 2 in position	Conveyor 2 in place to detect the input signal.
I30	Motor stop	Valid when [3.2.1 lift table Ctrl mode] is set to [2. motor double Limit] or [4. motor]. Controls the lifting support motor to stop.
I31	Motor rise	Controls the lifting support motor to rise.
I32	Motor fall	Controls the lifting support motor to lower
I33	End	Automatically stops after the ton bag process ends.
I34	Print Acc	Prints the total accumulated data when enabled.
I35	Print all Rec Acc	Prints the accumulated data for all recipes when enabled.

3.5.2. OUT Def.

Define the corresponding functions of switch output OUT1~OUT12. Click the switch output outlet to be set, and select the function to be defined in the pop-up option box.

< Back		5.IO		o Home	
5.1	IN Def.	5.2.1	OUT1: Q1.Running >	5.2.7	OUT7: Q10.Warning >
5.2	OUT Def.	5.2.2	OUT2: Q2.Stop >	5.2.8	OUT8: Q11.Clamp >
5.3	IO Test	5.2.3	OUT3: Q5.Fast >	5.2.9	OUT9: Q12.Hook On >
		5.2.4	OUT4: Q6.Med >	5.2.10	OUT10: Q13.Rise(Air) >
		5.2.5	OUT5: Q7.Fine >	5.2.11	OUT11: Q20.Inflate >
		5.2.6	OUT6: Q8.Fixed Value >	5.2.12	OUT12: Q21.Deflate >

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

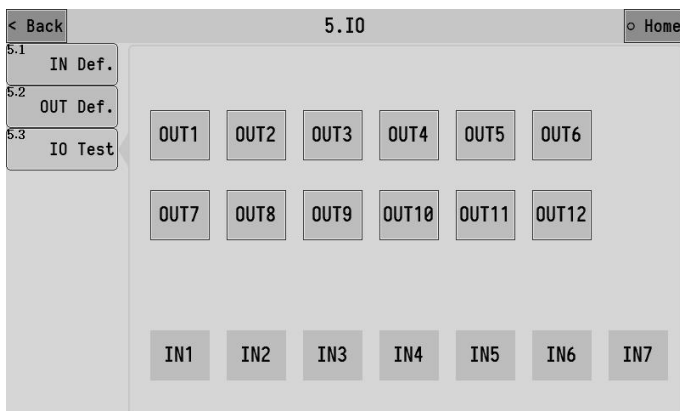
Fun number	Fun name	describe
Q0	None	No functional definition.
Q1	Running	The output is valid while running.
Q2	Stop	The output is valid when the state is stopped.
Q3	Slow stop	The output is valid while in the pause process.
Q4	Pause	The output is valid while in the paused state.
Q5	Fast	Fast feeding control signal.
Q6	Med	Medium speed feeding control signal.
Q7	Fine	Slow feeding control signal.
Q8	Fixed Value	When the feeding is completed, the output is valid, indicating that the feeding

		has been completed at present, and the duration can be set [3.6.1 Fixed retention time].
Q9	ove/und	The over/under difference function is on. When the over/under difference alarm occurs in the feeding result, the output is effective.
Q10	Warning	The output is valid when the controller has alarm.
Q11	Clamp	Bag clamping mechanism control signal, when effective bag clamping, when invalid bag loosening.
Q12	Hook On	Hook mechanism control signal, the output state of the signal is set by parameter [3.1.6 logic type of hook output signal].
Q13	Rise(air)	Pneumatic support rising control signal. Scaffolds rise when effective and fall when ineffective.
Q14	Rise(motor)	Rise control signal of electric bracket.
Q15	Fall (motor)	Drop control signal of electric support.
Q16	Flap Bag	Clamp function output signal.
Q17	Starving	Lack of material state output signal. When the signal input of "blanking level" is invalid, it is in the state of material shortage.

Q18	Filling	Feed control output signal. When the signal is valid, start the feeding device to feed the material into the storage hopper.	
Q19	Batch complete	The signal output is valid after the batch is completed.	
Q20	Inflate	Inflatable output signal.	The functions of inflation and return air can be described in section 3.3.3.
Q21	Deflate	Return air output signal.	
Q22	Conveyor 1 FW	Conveyor 1 positive turn control signal.	
Q23	Conveyor 1 BW	Conveyor 1 reverse control signal.	
Q24	Logic 1	Logic programming 1 function output signal.	
Q25	Logic 2	Logic programming 2 function output signal.	
Q26	Logic 3	Logic programming 3 function output signal.	
Q27	Logic 4	Logic programming 4 function output signal.	
Q28	Logic 5	Logic programming 5 function output signal.	
Q29	Conveyor 2 run	Operation control signal of conveyor 2.	

3.5.3. IO test

IO test is a function used to test whether the input switch quantity and output switch quantity work normally. The interface is shown as below:



OUT Def:

The OUT1~OUT12 buttons are used to test the output function of the switch volume. Grey indicates that the output of switching quantity is invalid, while green indicates that the output of switching quantity is valid.

Such as:

The output outlet of OUT3 is connected to the relay. To test whether the output of OUT3 is normal, click OUT3 button to switch the output state to be effective. If the line is normal, it can be observed that the connected relay on OUT3 is pulled in, and then click OUT3 button again to switch the output state to be invalid.

IN Def:

IN1~IN7 is used to test the input function of switching volume. Grey indicates that the switching input is invalid, while green indicates that the switching input is valid.

Such as:

A button switch is connected to the IN1 input port. To test whether the button switch is normal, you can manually press the connected button. If the line is normal, you can observe that the IN1 indicator light turns green. After releasing the button, if the line is normal, the IN1 indicator will be observed to turn gray.

3.6. Batch and accumulation

View the accumulated and historical data of the controller.

3.6.1. Batch and accumulation

Check the total accumulated value of the control and the corresponding formula accumulated value to set the number of run batches. The interface is shown as follows:

< Back 6.Bat&Acc. Home

6.1 Bat&Acc.

6.2 History Data

Acc. No. : 0

Acc. Wt : 0.00 kg

Rec. Acc.

Rec.	Rec. Name	Acc. No.	Acc. Wt
1	----	0	0.0
2	----	0	0.0
3	----	0	0.0
4	----	0	0.0
5	----	0	0.0
6	----	0	0.0
7	----	0	0.0
8	----	0	0.0
9	----	0	0.0
10	----	0	0.0
11	----	0	0.0
12	----	0	0.0
13	----	0	0.0

6.1.1 Batch Set 0

6.1.2 Complete Batch 0

Clr All Acc.

Clr Acc.

Clr Rec. Acc.

Clr Sel. Rec

USB Export

6.1.1	batch set	Used to set the number of packages. When the number of runs reaches the number of batches set, the packaging process will be stopped and the alarm will be alerted. Turn off the function when set to 0.
6.1.2	Complete batch	If batch number is set, this item displays the number of batches currently completed.

When the controller is inserted into the USB flash disk, the accumulative data file can be exported to the USB flash disk in CSV format.

3.6.2. Historical data

View the packaging history, including items such as the cumulative number of packages, dates, results, recipe parameter Settings, and packaging time.

The controller can store up to 100,000 pieces of historical data. When the storage space is full, The old data will be stored and overwritten again from sequence number 1.

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

The screenshot shows a screen titled "6.Bat&Acc." with a navigation menu on the left and a data table in the center. The navigation menu has two options: "6.1 Bat&Acc." and "6.2 History Data", with "6.2 History Data" currently selected. The data table has eight columns: "No.", "Acc. No.", "Date Time", "Result Rec.", "Target", "Fast Feed", and "Med:". The table contains ten rows of data, all of which are dashes ("--"). Below the table is a status bar with a "PageUp" button, a display showing "1 / 0", a "PageDn" button, a "Clear Data" button, and a "USB Export" button. At the bottom, it says "No. of data: 0 /100000".

No.	Acc. No.	Date Time	Result Rec.	Target	Fast Feed	Med:
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--

PageUp 1 / 0 PageDn Clear Data USB Export

No. of data: 0 /100000

3.7. Communications parameters

The controller can be equipped with two completely independent serial communication interfaces, RS232 and RS485, and the communication parameters of the two serial ports can be set respectively.

3.7.1. RS232 Set

Set relevant parameters of RS232 communication serial port.

7.Comm. Para.	
7.1.1	Slave ID 1
7.1.2	Protocol Modbus-RTU-H >
7.1.3	Baudrate 9600 >
7.1.4	Format 8-N-1 >

7.1.1	Slave IO	Set the device's communication address (slave station number).
7.1.2	Protocol	1.[Modbus-RTU-H]: Modbus-RTU communication protocol (two-word data with high characters in front).

		2.[Modbus-RTU-L]: Modbus-RTU communication protocol (double word data with low word before). 3. [YH-CONT]: Display protocol for connecting to Yao hua large screens (baud rate must be set to 2400). 4. [Print]: Used for printing accumulated data or recipe data.
7.1.3	Baud rate	Set the baud rate for serial communication
7.1.4	Format	1.[7-E-1]:7 data bit, parity, 1 stop bit 2.[7-O-1]: 7data bits, odd check, 1 stop bit 3.[8-N-1]:8 data bit, no check, 1 stop bit 4.[8-E-1]:8 data bit, parity, 1 stop bit 5.[8-O-1]:8 Data bit, odd check, 1 stop bit

3.7.1.1 Detailed Communication Protocol Description

When the communication protocol is set to 3. [YH-CONT], it can be used to connect to Yaohua LED displays. The communication format is as follows:

For example, if the current weight is "12.9", the instrument will send the string "9.21000=".

When the communication protocol is set to 4. [Print], refer to section 3.7.4.1 for detailed printing function instructions.

Refer to section 3.7.1 for RS232 setup instructions.

3.7.2. RS485 Set

Setting method refer to 3.7.1.RS232 setting.

3.7.3.Comm Setting

You can set network port parameters only when the controller is configured with a network port expansion board. The network port communication protocol is Modbus TCP. The configuration screen is as follows:

< Back		8.Comm Setting		o Home
8.1	RS232	8.4.1	IP_1	192
8.2	RS485	8.4.2	IP_2	168
8.3	ExModbus	8.4.3	IP_3	101
8.4	TCP Set	8.4.4	IP_4	246
		8.4.5	Port	502
		8.4.6	MAC Offset	0

Note: The network port parameters take effect only after the controller is restarted after being powered off.

8.4.1	IP_1	Set the IP address of the controller.
8.4.2	IP_2	
8.4.3	IP_3	
8.4.4	IP_4	
8.4.5	Port	Network port Number for communication.

8.4.6	MAC Offset	Offset of the communication MAC address of the network port.
-------	------------	--

3.7.4. Print set

When the serial communication interface RS232 or RS485 communication protocol is set to print, you can set the relevant print parameters on this page.

The screenshot shows the '7.Comm Setting' menu with a sidebar on the left containing options: RS232, RS485, TCP Set, and Print Set (selected). The main area displays settings for the selected protocol:

- 7.4.1 Print Language: 中文 (Chinese)
- 7.4.2 Print Width: 32 Col
- 7.4.3 Auto Print: OFF
- 7.4.4 Print Blank Lines: 3
- 7.4.5 Print Dir (Brightek): Default
- 7.4.6 User Def 1: (empty)
- 7.4.7 User Def 2: (empty)

On the right, there is a 'Print Acc Contet Select' (Print Accumulation Content Select) panel with the following options:

- Print Acc Contet Select: 累计数据 (Accumulation Data)
- 日期: (Date): xxxx-xx-xx xx:xx
- 自定义信息1 (Custom Information 1): ☐
- 自定义信息2 (Custom Information 2): ☐
- 总累计 (Total Accumulation): ☒
- 配方累计 (Recipe Accumulation): ☒

7.4.1	Print Language	1. [Chinese]: Sets the print language to Chinese. 2. [English]: Sets the print language to English.
7.4.2	Print Width	1. [32 Columns]: Sets the print column width to 32 columns. 2. [24 Columns]: Sets the print column width to 24 columns.

7.4.3	Auto print	1. [Enabled]: In print mode, automatically prints the packaging result after each unloading. 2. [Disabled]: Does not print the result after each weighing.
7.4.4	Print blank lines	The number of lines to feed after each accumulated result is printed.
7.4.5	Print Dir(brightek)	1. [Default]: Selects the default setting for printing. Generally, it is forward printing. 2. [obverse]: The content selected in the right box is printed in forward direction. 3. [Reverse]: The content selected in the right box is printed upside down.
7.4.6	User Def 1	Enter custom information to be printed, such as company name or product number. If Custom Information 1 is selected in the accumulated print content, the entered custom information will be printed.
7.4.7	User Def2	Enter custom information to be printed, such as company name or product number. If Custom Information 2 is selected in the

		accumulated print content, the entered custom information will be printed.
--	--	--

3.7.4.1 Detailed Print Function Description

The print function can be set to auto print or manual print based on requirements. When [7.4.3 Auto Print Each Weighing Result] is enabled, the packaging result will be printed after each packaging. The first print includes the unit, recipe, accumulated count, and packaging result, followed by only the accumulated count and packaging result. The format is as follows:

Result Details		
Unit: kg		
Recipe 1		
Accumulated Count	Target Value	Result

9	10.0	11.7
10	10.0	11.1

Manual print can print the total accumulated data and all recipe accumulated data separately. Click the "Print" button on the main interface, or click "Print Total Accumulation" in the batch and accumulation interface, or input the "I34 Print Total Accumulation" signal to print the total accumulated data. The print information can be selected based on the accumulated print content. The print format is as follows:

Acc Data

Data: 2023/08/12 16:38

Acc. Cnt:	9
Acc. Wt:	112.7kg
Rec No:	1
Rec Cnt:	9
Acc Wt:	112.7kg

Printing all recipe accumulated data will print the accumulated data for all current recipes. Click "Print All Recipe Accumulation" in the batch and accumulation interface, or input the "I35 Print All Recipe Accumulation" signal to print. The print format is as follows:

Recipe Accumulated Data

Data : 2023/08/12 16:41

Rec No:	1
Target :	10.0kg
Rec Cnt:	9
Acc Wt:	112.7kg

3.8. Password

The System setting button on the main screen and 1 to 12 items on the system maintenance menu screen can set a separate password and password switch for each item.

All passwords are set by default: 000000。

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

The password management page is as follows:

< Back		8.Password		3.75 Home		
8.1 Password Setting	8.1.1 System Setting	ON	Set	8.1.8 7 Comm Setting	OFF	Set
	8.1.2 1 Calibration	OFF	Set	8.1.9 8 Password	ON	Set
	8.1.3 ighing Parameters	OFF	Set	8.1.10 9 System	OFF	Set
	8.1.4 3 Ctrl Parameters	OFF	Set	8.1.11 10 Logic	OFF	Set
	8.1.5 4 Recipe Setting	OFF	Set	8.1.12 1 Shortcut Setting	OFF	Set
	8.1.6 5 I/O	OFF	Set	8.1.13 11 Analog	OFF	Set
	8.1.7 6 Acc Data	OFF	Set			

3.9. System

System interface contains para reset, date /time, registration, backup/recovery, data import/export.

3.9.1. Para. Reset

Click Reset to reset the corresponding parameter value. The parameter value will be restored to the factory setting. Please operate with caution.

< Back

9.System

Home

9.1
Para. Reset

9.2
Date/Time

9.3
Register

9.4
Backup Recover

9.5
Import Export

9.1.1 All Para.

Reset

9.1.2 Wt Calib

Reset

9.1.3 Basic Wt Para.

Reset

9.1.4 IO Define

Reset

9.1.5 Ctrl Para.

Reset

9.1.6 Recipe

Reset

9.1.7 Logic Program

Reset

9.1.8 Comm. Para.

Reset

3.9.2. Date /time

The time and date of the controller can be modified.

< Back

9.System

Home

9.1
Para. Reset

9.2
Date/Time

9.3
Register

9.4
Backup Recover

9.5
Import Export

2020-09-15(Tue)15:41:44

Year	2020	Hour	15
Mon	9	Min	41
Day	15	Sec	43

Write in

3.9.3. Register

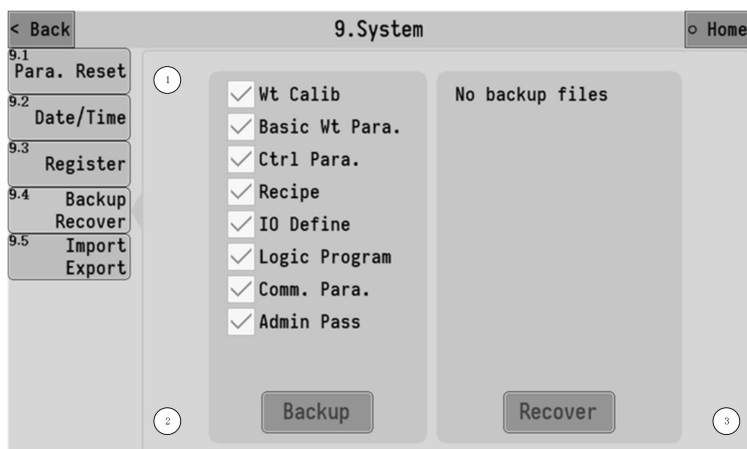
Product usage registration Settings.

3.9.4. Backup Recover

The parameter values currently set by the controller can be backed up to memory in the local machine and can be restored when needed.

The left side can select the parameter items to be backed up, the right side shows whether there is a backup file on the current machine, and the date of the backup file on the current machine is displayed, and the current backup file can be deleted.

To prevent mis-operation, when entering the parameter backup and restore interface, default **Backup** button and **Delete the backup** button are in the disabled state, Backup and delete functions can only be enabled through special operations. The operation method is to click location ① three times as shown in the figure below, then click location ② three times, and then click location ③ three times to enable backup and delete functions.



3.9.5. Data import/export

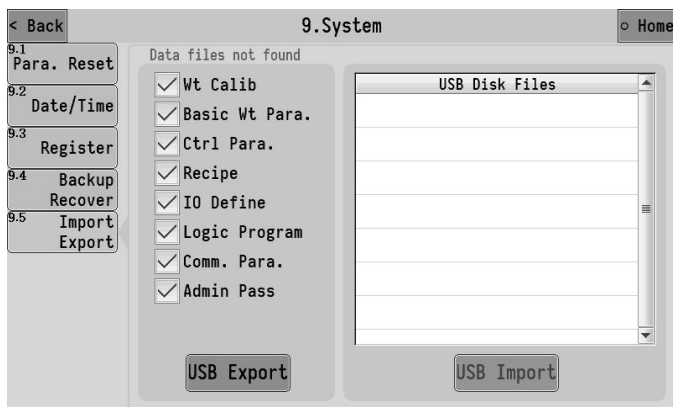
The controller can export the parameters currently set to the USB flash disk, and the export file is in CSV format.

Data export operation:

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

Input import operation:

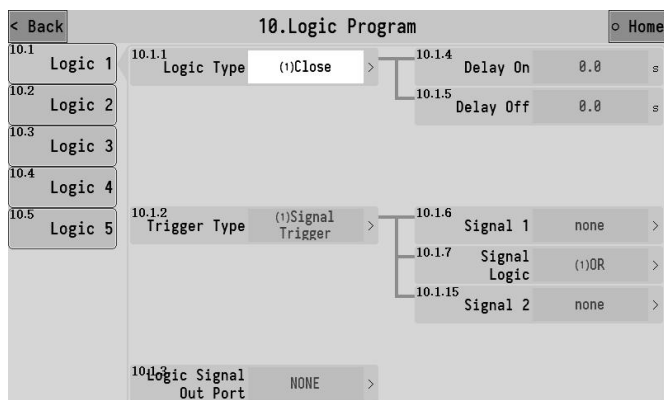
Insert a USB flash drive with data files, and the list on the right side of the interface will show the data files existing in the current USB flash drive. Select the data files to be imported and click **USB import.** Is ok.



3.10.Logic programming

The controller supports 5 logical programming functions. When the controller's existing functions cannot meet the control requirements of the device, it can try to use the logical programming function to define auxiliary logical output signals outside the controller's running process to control the device's actions.

The interface of logical programming setting is as follows:



The following is an example of logical programming 1 to explain the role of each parameter.

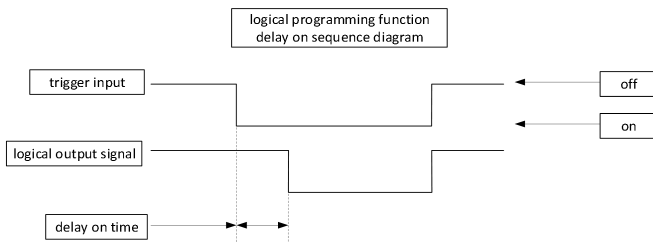
10.1.1	Logic type	Select the type of logical programming. 1.[close]: Turn off the logical output function. 2.[delay on] 3.[delay off] 4.[delay on and delay off] 5.[off-on edge trigger] 6.[on-off edge trigger] 7.[self hold] 8.[pulse] See the corresponding function description for details: 3.10.1
--------	------------	---

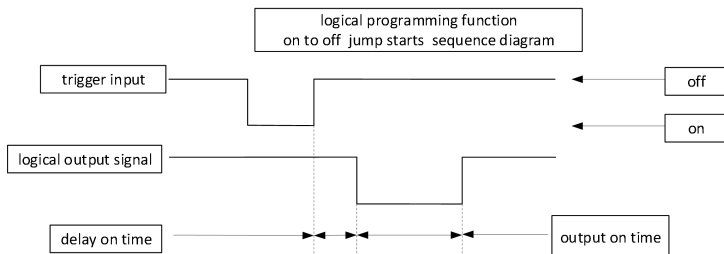
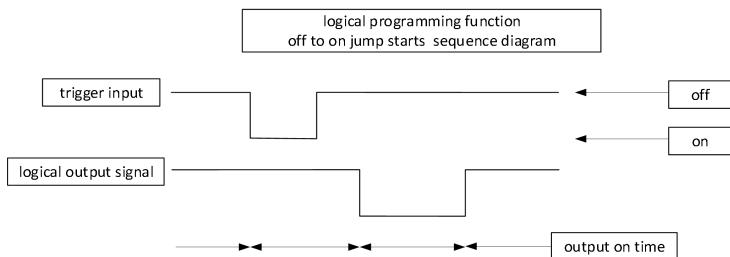
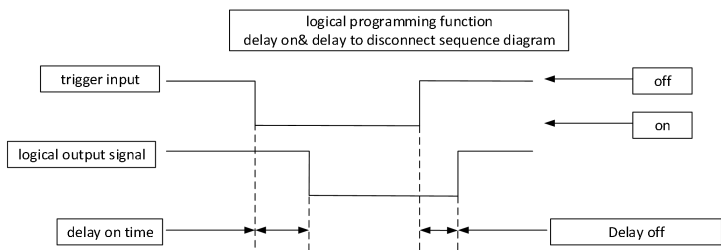
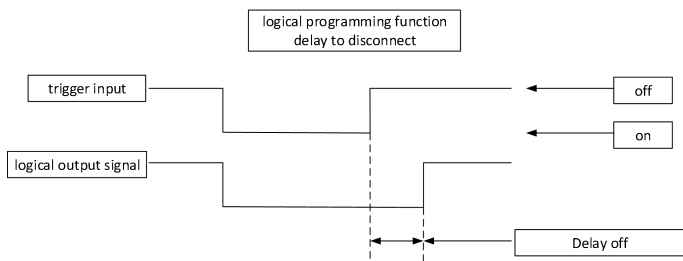
10.1.2	Trigger type	1.[signal trigger]: This logical output is triggered by a signal. 2.[condition trigger]: This logical output is triggered by reaching a certain condition.
10.1.3	Logical signal output port	Select the logical output signal to define to an OUT outlet.
10.1.4	Delay time	The time that the logical output signal is delayed on.
10.1.5	Delayed cutoff time	The time that the logical output signal is delayed and disconnected.
10.1.6	Trigger signal 1 setting	Select to be the trigger signal 1 of logic output.
10.1.7	Signal logic	Select the logical relationship between trigger signal 1 and trigger signal 2 used to trigger the logical output. 1.[or]: Trigger signal 1 and trigger signal 2 any valid signal can trigger the logical output. 2.[with]: Trigger signal 1 and trigger signal 2 need to be both valid to trigger the logical output.

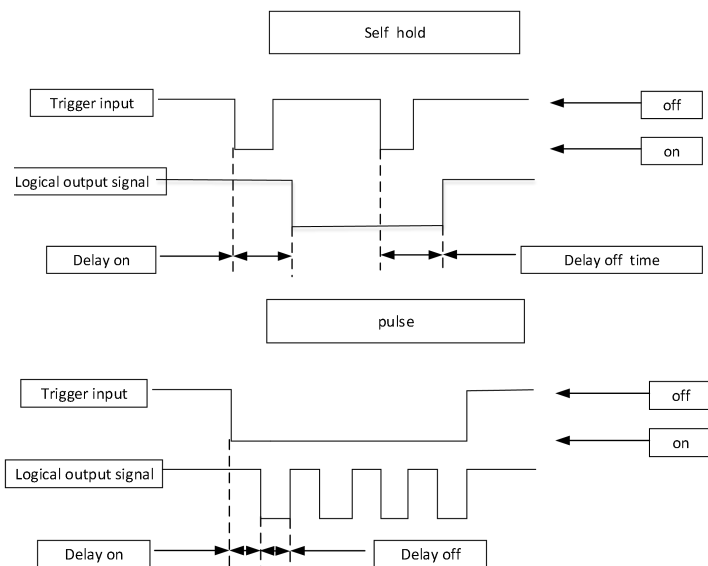
		3.[xor]: Trigger signal 1 and trigger signal 2 cannot trigger the logical output at the same time.
10.1.8	Output effective time	【10.1.1 Logic type】 Set to item 5/6 to set this parameter. The effective time of the output after the trigger of the logic signal, and the time to the end of the logical output. When this time is set to 0, the logical output signal will be terminated only by the reset signal.
10.1.9	Reset signal setting	【10.1.1 Logic type】 Set to item 5/6 to set this parameter. After the logical output is effective, the reset signal can reset the logical output, making the logical output signal invalid and ending the logical output process.
10.1.10	Reset signal logic	1.[Effective reset]: Reset logic output when reset signal is valid. 2.[Invalid reset]: When the bit signal is invalid, reset the logical output.
10.1.11	Trigger setting	Select the condition that triggers the logical output. 1.[The weight is greater than the set value]

		2.[The weight is less than the set value] 3.[The weight is within the range] 4.[The weight is outside the range]
10.1.12	set point 1	Used to set the weight value of the trigger condition.
10.1.13	set point 2	
10.1.14	Weight stability condition	1.[ON]: The weight meets the set trigger condition, and the logic output cannot be triggered until the weight is stable. 2.[OFF]: The weight meets the set trigger condition and can trigger the logic output without stability.
10.1.15	Trigger signal 2 setting	Choose to triggers the signal 2 logical output.

3.10.1. Logical output sequence diagram







3.10.2. illustrate

Code function: After the pocket output signal is valid, it will be delayed for 1s, and then output OUT12 will be continued for 2s, which is used to control the coding machine to print the code on the bag after the bag is filled.

The setting is as follows:

【Logic type】: Invalid - valid jump along trigger

【Delay time】: 1s

【Output effective time】: 2s

【Trigger type】: Signal trigger

【Trigger setting】: Clamp

【Logical signal output port】: OUT12

Through the cooperation of different trigger signals, trigger conditions and 5 groups of logical programming signals, the output of very flexible logic signals can be combined.

For example, the following logic should be implemented: real-time detection of weight higher than 100kg, namely output OUT10 for alarm instruction. When the alarm is effective, it will delay 2s and output OUT11 lasts 3s to control the discharging mechanism to discharge the materials.

The setting is as follows:

Logic programming 1: The test weight above 100kg is output OUT10.

【Logic type】: Delay on

【Delay time】: 0s

【Trigger type】: Condition triggered

【Trigger setting】: The weight is greater than the set value

【set point 1】: 100kg

【Logical signal output port】: OUT10

Logic programming 2: When OUT10 is effective, it will delay 2s and output OUT11 will last 3s.

【Logic type】: Invalid - valid jump along trigger

【Delay time】: 2s

【Output effective time】: 3s

【Trigger type】: Signal trigger

【Trigger setting】: Logical output 1

【Logical signal output port】: OUT11

3.11. Shortcut Setting

You can use the Shortcut screen configuration function to configure the parameters displayed in the Shortcut Settings screen (click **Shortcut Set**) to enter the main screen.

A maximum of four pages can be displayed on the shortcut page. Shortcuts 1 to 4 can be selected by the check box on the shortcut page. The selected pages are displayed on the shortcut setting page.

Quick Settings A maximum of 16 parameters can be displayed on each page. Click the option box and select the parameters to be displayed on the shortcut screen.

The shortcut interface configuration is as follows:

< Back		11.Shortcut Setting		3.75 Home	
11.1 Shortcut1	11.1.1 Para 1	4.2.1 Target	>	11.1.9 Para 9	None >
11.2 Shortcut2	11.1.2 Para 2	4.2.2 Fast Feed	>	11.1.10 Para 10	None >
11.3 Shortcut3	11.1.3 Para 3	4.2.3 Med Feed	>	11.1.11 Para 11	None >
11.4 Shortcut4	11.1.4 Para 4	4.2.4 Slow Feed	>	11.1.12 Para 12	None >
	11.1.5 Para 5	4.2.5 Zero Area	>	11.1.13 Para 13	None >
	11.1.6 Para 6	None	>	11.1.14 Para 14	None >
	11.1.7 Para 7	None	>	11.1.15 Para 15	None >
	11.1.8 Para 8	None	>	11.1.16 Para 16	None >

3.12. Analog

The analog output function requires an optional analog output expansion board.

Analog interface:

AO- (DB9 connector pin 1): Negative terminal for analog output.

AO+ (DB9 connector pin 7): Positive terminal for analog output.

3.12.1. Output Setting

Set parameters related to analog output function.

< Back 9. Analog Home

9.1 Output Set

9.2 Analog Clb

9.1.1 Analog Range ① 0-20mA >

9.1.2 Analog Meaning ① Feeding >

9.1.3 User Set Max 0.000 mA

9.1.4 User Set Min 0.000 mA

12.1.1	Analog Range	①[0-5V] ②[0-10V] ③[4-20mA] ④[0-20mA] ⑤[0-24mA] ⑥[Custom voltage]
--------	--------------	---

		⑦[Custom current]
12.1.2	Analog Meaning	①feeding: feeding can output large, medium and small input corresponding to the size of the simulation, to control the feeding device for feeding. For details can see 3.4.4
12.1.3	User Set Max	When 【12.1.1 Analog Range】 set to⑥[Custom voltage] or ⑦[custom current], can use these two parameters to customize the output voltage or current output range.
12.1.4	User Set Min	

3.12.2. Analog Calibration

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

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

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

1. First click on the calibration switch and open state of analog calibration, then point 0 v place there will be a sign of the arrow, instructions are currently calibration of analog point is 0 v, the output voltage of the multimeter is used to measure the actual value (AO+ between AO-), normal should

be about 0 v, behind and enter into the corresponding actual output values in the input box.

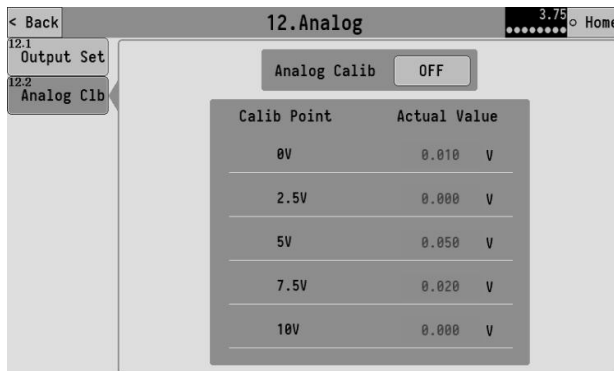
Note: When using the multimeter to measure the voltage, remove the connection line on the AO+ and AO- ports to prevent the influence of the back-end circuit on the output voltage value.

2. Click 2.5V of the marking point, the arrow switches to 2.5V of the marking point, measure the actual output voltage value and input it into the corresponding input box.

3. The calibration methods for 5V, 7.5V and 10V points are the same as above.

4. After all the calibration points are completed, the calibration state of the analog quantity can be closed to complete the calibration of the analog quantity.

The related interface is as follows:

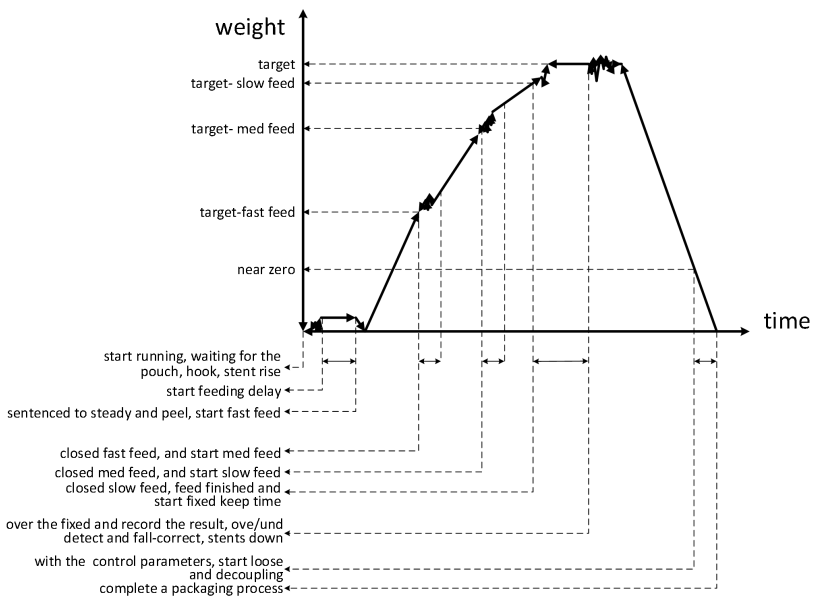


Note: There is no analog output setting and calibration data when reset all parameters. For analog parameters, click

Analog reset

4. Instructions of Process

4.1 Process of weighing ton package



The basic packaging process of weighing scales with bucket will be explained in combination with the above figure:

1. Start running.
2. Wait for the bag clamping and hook completion,

and the bracket will rise^①.

3. After the end of the mounting, delay before starting feeding, and stable peeling after the end of the delay (for the net package, no peeling for the gross package).
4. After successfully removing the skin, open the large feed ,when the weight value $\geq$ target value -leading quantity of fast feeding, close fast feeding, open moderate feeding.
5. When the weight value $\geq$ target value-leading quantity of moderate feeding, close moderate feeding and open fine feeding.
6. When the weight value $\geq$ target value-fine feeding drop in level number ,close fine feeding and end feeding ,start fixed value and hold time.
7. If the Flapping bag^② is turned on during feeding, the bagging action will be performed simultaneously during feeding.
8. After the maintenance time of the fixed value is over, the weight of feeding shall be recorded, and it shall be judged whether to carry out overbalance detection and drop correction according to the setting of control parameters^③
9. The bracket descend^①.
10. Unclamp the bag and unhook the bag according to the setting of control parameters.
11. If the control function of the conveyor^④ is turned

on after the lowering of the support, the signal of the output conveyor controls the conveyor to carry away the packaging bag.

12. Complete the first packaging process and return to step 1 to start a new packaging process.

Note:

① Bracket lifting control: Detailed control parameters are set in Section 3.3.2.

【3.2.1 lift stents ctrl mode】 The process of “air infinite” is:

Stent rising process: The output signal of switching volume "Q13 rising (air)" is effective, and the bracket begins to rise. After setting [3.2.2 rising time], the bracket is considered to have finished rising.

Stent descent process: The output of switch output signal "Q13 rising (air)" is invalid, and the support begins to fall. After setting [3.2.3 falling time], the support is considered to have finished falling.

【3.2.1 lift stents ctrl mode】 The process of “motor double limit:

Stent rising process: The output signal of the switching volume "Q14 rise (motor)" is effective, and the support begins to rise. When the input signal of the switching volume "I18 support upper limit" is effective, the output of the output signal of the switching volume "Q14 rise (motor)" is invalid, and the support is considered to have finished rising.

Stent descent process: When the output signal of the switching volume "Q15 drop (motor)" is effective, the support begins to drop. When the input signal of the switching volume "I19 upper limit of the support" is effective, the output of the output signal of the switching volume "Q15 fall (motor)" is invalid, and the support is considered to have finished its decline.

【3.2.1 lift Table ctrl mode】 The process of "Air double limit

Stent rising process: The output signal of switching volume "Q13 rising (air)" is effective, and the support begins to rise. When the input signal of switching volume "I18 upper limit of support" is effective, the support is considered to have finished rising.

Stent descent process: The output of "Q13 rising (air)" of the output signal of switching volume is invalid, and the support begins to fall. When the input signal of "I19 Fall limit" is effective, the support is considered to have finished falling.

② Bag Function: Detailed control parameters are set in Section 3.3.5.

③ fixed process: Detailed control parameters are set in Section 3.3.6.

④ conveyor: Detailed control parameters are set in Section 3.3.7.

4.2 Stop/pause /slow stop and end

After the stop signal is input, the controller will immediately shut down the feeding related output signal and enter the stop state. After starting again, the packaging process will be resumed.

After the pause signal input, the controller will immediately shut down the feeding related output signal and enter the pause state. The user can choose to start again or enter the stop state. After the restart, the state before the pause will continue to start the packaging process.

After the stop signal is input, the controller will stop after completing the packaging process.

After the end signal is input, if the controller is in the pre-setpoint process, it will enter the setpoint process and complete the ton bag process before stopping. If it is in the setpoint or later process, it will complete the ton bag process before stopping.

5. Trouble shooting Common Faults

When the controller is running, detailed running steps are displayed on the main screen, indicating the functions and

processes that the controller is performing. You can determine the running process of the controller according to the prompts, helping you troubleshoot faults.

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

Number	Content	Instructions
1	ADOFL / - ADOFL	The sensor signal is abnormal. 1. The sensor is incorrectly connected and has poor contact. (Note the four-wire and six-wire connections) 2. The sensor is damaged. 3. The load borne by the sensor exceeds the range.
2	OFL / -OFL	Weight overflow, OFL will be prompted when weight exceeds [1.1.4 Maximum range] setting value. If the empty scale shows OFL, please check: 1. [1.1.4 Maximum range] Is the setting correct? 2. Calibrate the abnormality and calibrate it again. 3. Check whether the sensor is damaged.
3	Equipment static state weight	1. Whether the sensor line connection is correct and reliable, whether the line rust oxidation.

	abnormal jump unstable	2. Whether weighing mechanism is affected by external force or vibration. 3. Check whether the sensor is damaged. 4. .The sensor or controller is interfered by electrical equipment around the site, such as motors and frequency converters. 5. [2.1.5 Filtering level] Whether the Settings are appropriate.
4	Unable to start	1. Check whether input lines such as the external start button are connected to the controller properly (you can test the switch value). 2. Check whether the input port of start signal access is correctly defined as ON.
5	Feeding result is inaccurate	1. Inaccurate results displayed by the controller after feeding: (1) Adjust the setting of Fast, med and small dosage of leading amount of formula parameters. Ensure that the small casting process is long enough to ensure accuracy. (2) Whether the feeding mechanism is normal, whether the

		following material mouth is blocked, and whether the material flow is smooth. 2. The results displayed by the controller are accurate, but the actual results are accurate. (1) There is a deviation between the display and the actual weight, which needs to be calibrated. (2) It is best to use weights or materials of the same weight as the target value for calibration, and pay attention to the uniform force on the scale platform during calibration, not unbalance loading.
6	Incorrect accumulated weight	The controller records the accumulated value at the end of the fixed value process, so check whether the setting of 【3.6.1 hold keep time】 is enough to ensure that at the end of the fixed value holding time, the controller shows that the weight has stabilized and no longer jumps greatly, so as to record the accurate cumulative result of feeding.

6. Appendix

Update Log

Data	Content
2020-7-3	First edition.
2020-8-13	Logic programming function upgraded, signal trigger type supports selecting two trigger signals, and the logical relationship between trigger signals (OR, AND, XOR) can be set, enabling more flexible logic control.
2020-9-29	Logic programming function logic type added "Pulse" type. [3.1.11 unclamp judgement] and [3.1.8 Hook off Judgment] support selecting "Manual".
2021-10-15	Added support for switch expansion boards, optional 4-input 3-output switch expansion board. Added "Communication Trigger" option to logic programming trigger types. Added input/output IO definition display in the switch test interface.
2022-1-17	Added F1~F7 numbering to the main interface bottom function keys. New password management function. Added quick interface configuration function. Updated some interface images. Added Chapter 5: Common Fault Troubleshooting

2022-8-8	Added [4.2.6 Tare Value] and [4.2.7 Tare Error Value] parameters and related function descriptions.
2022-8-10	Added [3.5.1 Flap Func SW] parameter option description. Added section 3.4.3 Flap bag description.
2023-5-22	Added [3.2.10 lift table motor reset startup] and [3.8.6 sign in debounce time] parameters and related function descriptions. Added section 3.3.8.1 Detailed Feeding Function Description. Added input signals "I30. motor Stop", "I31. motor Up", "I32. Motor fall", and "I33. End". Added end signal description in section 4.2 Stop, Pause, Slow Stop, and End. Added section 1.2.1 Serial Port Wiring Method. Updated some interface images.
2023-8-17	Added [④ motor] to [3.2.1 Lift table Ctrl Method]. Added section 3.12 Analog.
2023-9-25	Added optional RJ45 Ethernet port support, supporting Modbus TCP communication. Added section 3.7.3 Ethernet Port Function and Detailed Description.
2023-10-8	Fixed the issue of repeated automatic hooking and unhooking when the support lowers to the zero zone value after batching is completed.
2023-12-5	Updated section 3.7.3 Ethernet Port Setup diagram.

2024-5-21	Added [③ YH-CONT] and [④ Print] to communication protocols. Added input signals "I34. Print Total Accumulation" and "I35. Print All Recipe Accumulation". Added section 3.7.1.1 Detailed Communication Protocol Description. Added section 3.7.4 Print Parameter Settings.
2024-7-24	Updated RS485 wiring diagram in section 1.2.1 Serial Port Wiring Method.
2024-10-30	Updated the print format for total accumulation and all recipe accumulation in section 3.7.4.1 Detailed Print Function Description.
2024-12-27	Added parameter range descriptions. Updated initial parameter values in interface images.