GENERAL MEASURE

杰 • 曼 • 科 • 技

GM9907LD

User's Manual

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Company Website http:// www.gmweighing.com

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Contents

1. Outline ..... - 1 -
1.1 Functions and Features ..... - 1 -
1.2 Front Panel Description ..... - 1 -
1.3 Rear Panel Description ..... - 2 -
1.4 Technical Specifications ..... - 3 -
2. Installation ..... - 4 -
2.1 General principle ..... - 4 -
2.2 Load Cell Connection ..... - 4 -
2.3 I/O Port Connection ..... - 4 -
2.4 Power Supply Connection ..... - 5 -
2.5 Serial Port Connection ..... - 5 -
2.5.1Troubleshooting Serial Port Faults ..... - 6 -
2.6 Network port connection ..... - 6 -
2.6.1Troubleshooting Network Port Faults ..... - 7 -
2.7 Touch Screen Calibration ..... - 7 -
3. User Permission Description ..... - 8 -
4. Menu ..... - 9 -
4.1 Calibration ..... - 10 -
4.2 Recipe Parameter ..... - 11 -
4.3 Weigh Format Parameter ..... - 16 -
4.4 Maintenance ..... - 17 -
4.4.1 Scale Structure ..... - 18 -
4.4.2 Peripheral ON/OFF ..... - 21 -
4.4.3 Communication Setting ..... - 21 -
4.4.4 User Logic Program ..... - 22 -
4.4.5 Reset ..... - 26 -
4.4.6 Hardware Test ..... - 26 -
4.4.7 Display Style ..... - 27 -
4.5 Peripheral Parameter ..... - 27 -
4.6 Motor Parameter ..... - 31 -
4.7 Statistic ..... - 34 -
4.8 I/O Module ..... - 35 -
4.8.1 Output port & input port definition ..... - 37 -
4.9 COM Master mode ..... - 45 -
5. Function Description ..... - 46 -
5.1 Setting the operating mode ..... - 46 -
5.2 Batch ..... - 46 -
5.3 Filling Level Control ..... - 46 -
5.3.1 Dual Supplement ..... - 46 -
5.3.2 Single Supplement ..... - 47 -
5.4 Quick Setup ..... - 47 -
5.5 U disk update software ..... - 47 -
5.5.1 Foreground update process ..... - 47 -
5.5.2 Background update process ..... - 47 -
5.6 U disk update boot interface ..... - 47 -
5.7 Sewing control ..... - 48 -
5.8 DISC Shaking ..... - 48 -
5.9 Overtime Alarm of filling and discharge function ..... - 49 -
5.10 Auxiliary pulse function ..... - 49 -

5.11 Adaptive function ..... - 49 -
5.12 Hanger up control function ..... - 50 -
5.13 DISC interlock function ..... - 50 -
5.14 Binyes multi-scale function ..... - 50 -
5.15 Conveyor 3 level function ..... - 51 -
6. Serial port communication ..... - 53 -
6.1 Printing method ..... - 53 -
6.1.1 Auto Print ..... - 53 -
6.1.2 Total ACUM print ..... - 54 -
6.1.3 Recipe ACUM print ..... - 55 -
6.1.4 User ACUM print ..... - 56 -
6.2 Continuous mode ..... - 56 -
6.2.1 Continuous mode data frame format is as follows: ..... - 56 -
6.3 Modbus-RTU protocol ..... - 57 -
6.3.1 Function code and abnormal code ..... - 57 -
6.3.2 MODBUS transmission mode ..... - 57 -
6.3.3 MODBUS address assignment ..... - 57 -
6.4 Re-ContA/B protocol ..... - 81 -
7. Auto packaging process ..... - 82 -
7.1 Dual scale with hopper mode packaging ..... - 82 -
7.2 Scale A with hopper mode packing ..... - 84 -
7.3 Scale B with hopper mode packing ..... - 84 -
7.4 Dual hopper dual clampe bag AB separate packing mode ..... - 85 -
7.5 Dual hopper dual clip bag AB Comb packing mode ..... - 86 -
7.6 Dual scale no hopper mode packing ..... - 87 -
7.7 Dual scale no hopper individual packing ..... - 88 -
7.8 Bulk accumulation process ..... - 88 -
8. Motor Work Process ..... - 90 -
8.1 Motor Filling Portion ..... - 90 -
8.1.1 Step Motor Drive Filling ..... - 90 -
8.1.2 Motor Drive Filling ..... - 90 -
8.2 Motor lock Bag Portion ..... - 91 -
8.2.1 Step Motor Drive lock/unlock bag ..... - 91 -
8.2.2 Motor Drive Dual-Limit lock/unlock bag ..... - 91 -
8.2.3 Motor Drive Single-Limit lock/unlock bag ..... - 92 -
8.3 Motor Discharge Portion ..... - 92 -
8.3.1 Step Motor Drive Discharge ..... - 92 -
8.3.2 Motor Drive Single-Limit Discharge ..... - 92 -
8.3.3 Motor Drive Dual-Limit Discharge ..... - 93 -
8.3.4 Motor Drive Rotating Discharge ..... - 93 -
8.4 Motor Debug Function ..... - 94 -
9. Dimension (mm) ..... - 95 -

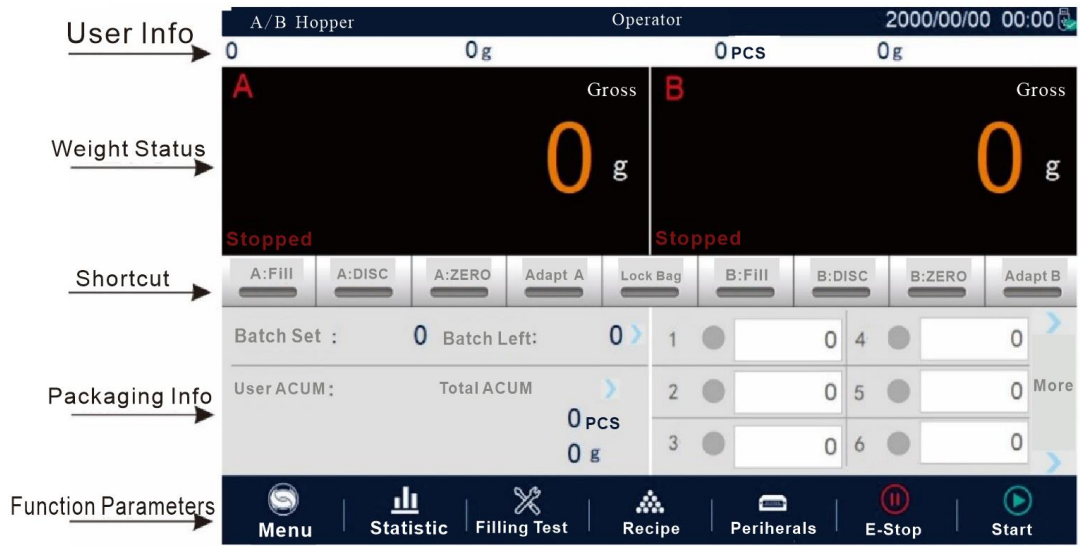
1. Outline

GM9907 bagging controller is a new weighing controller specially developed for automatic quantitative packing scale with double scale increment method.The controller adopts the English touch screen display interface, the operation is intuitive and simple;The new algorithm makes the weighing control faster and more accurate.USB interface and dual serial port make the device easier to system interconnection.Can be widely used in feed, chemical, food and other industries that need quantitative packaging equipment.

1.1 Functions and Features

- Full English display interface, make the operation more intuitive and easy
- Three optional weigher mode: With hopper mode , no hopper mode and bulk scale.
- 28 ON/OFF input and output control (12 in /16 out); input and output port location can be customized.
- I/O test functions, and convenient packaging weighers debugging
- Three levels speed automatic control filling, with optional slow jogging.
- It can store 40 kinds of recipes for different range of materials
- Convenient USB port to input and output of various types parameters
- fill control functions, convenient packing scale with the front filling device of controlMultiple digital filter function
- Automatic drop correction function
- Multiple digital filtering function
- Batch number setting function
- Patting bag function for packing powder materials
- Automatic zero tracking function
- Time / date function
- User permission identity settings
- Dual serial ports to connect with printer, computer, Secondary display.

1.2 Front Panel Description



Interface Description:

① User info: Show user ID, recipe ID, system time, total ACUM and batch.

② Weight status: Weight value display, weight unit display, 9 digit display and output I/O module shortcut.

③Shortcut:Fill,DISC,ZERO ,Adapt shortcuts for scale A and scale B.

④Packaging info: show current ACUM info, shortcut setting, batch and target value.。

⑤Function parameters: Controller menu parameter and setting.

Shortcut setting recipe parameter

Packing history record

Debug interface description:

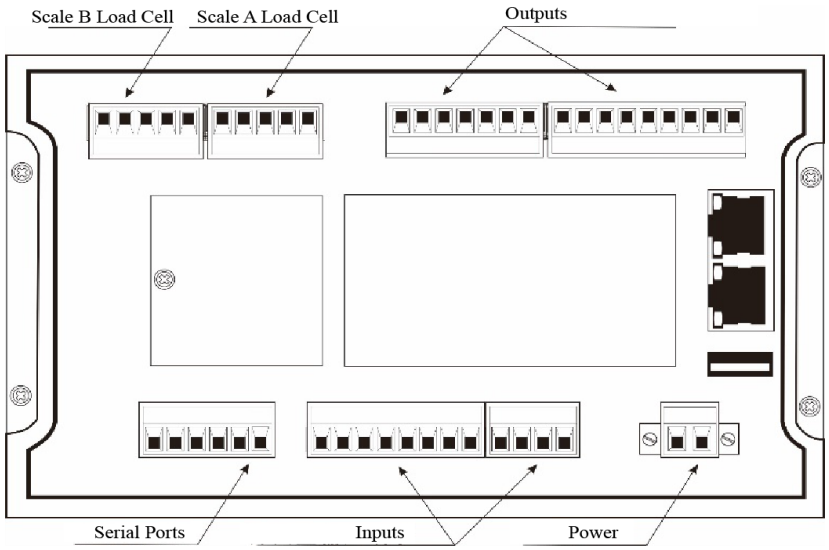
①Shortcut setting recipe paremeter: Can promptly setting recipe parameter, debug controller easliy.

②Packing history record: Can view the current packaging history data directly, easy to compare.

Indicator light Description:

Right one：power light；

1.3 Rear Panel Description



1.4 Technical Specifications

General specifications		Digital part	
Power supply	24V	Display	**7 inch** resistance touch screen
Power filter	Included	Negative display	“—”
Operating temperature	-10～40℃	Overload Indication	weight over range/low signal of load cell
Maximum humidity	90% RH without dew		
Power consumption	15W	Decimal point position	5 options
Dimensions	199mm ×133mm ×46.7mm		
Analog part			
Load cell power supply	DC5V 125mA（MAX）	Input impedance	10MΩ
Zero adjustment range	0.002～15mV（when load cell is 3mV/V）	Input sensitivity	0.02uV/d
Input range	0.02～15mV	Conversion	Sigma- Delta
A/D Conversion rate	120、240、480、960 Times/second	Non-linear	**0.01% F.S**
Gain drift	10PPM/℃	The maximum display accuracy	1/100000

2. Installation

2.1 General principle

1）Make appropriate installation holes on the control box, (size: 181mm ×115mm)

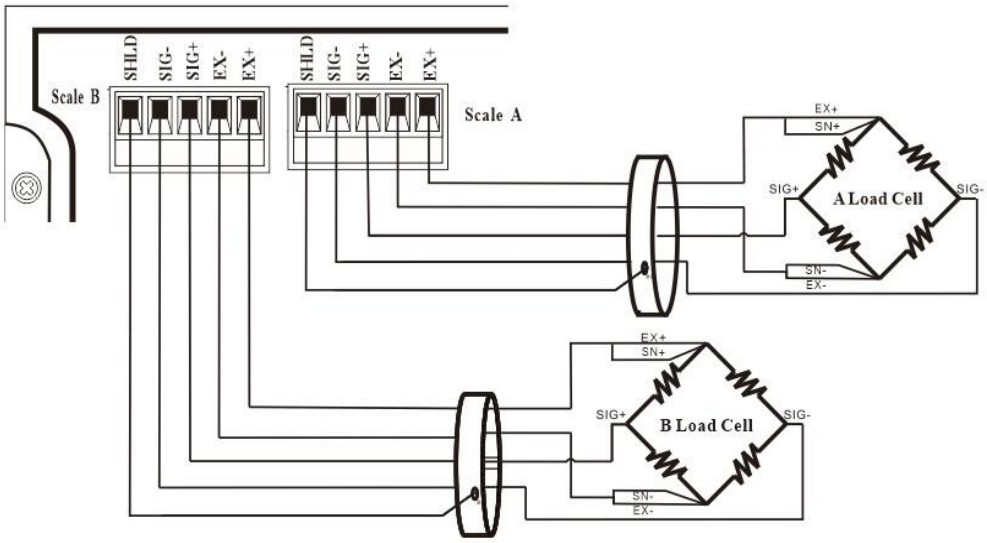
2）Install the GM9907-LD into a control box.

3）Remove the fixing plates on both sides of GM9907-LD, fix it with the fixing plates and lock them with M3*10 screws.

※Suggested torque for side strip screws: 3-5Kg.

2.2 Load Cell Connection

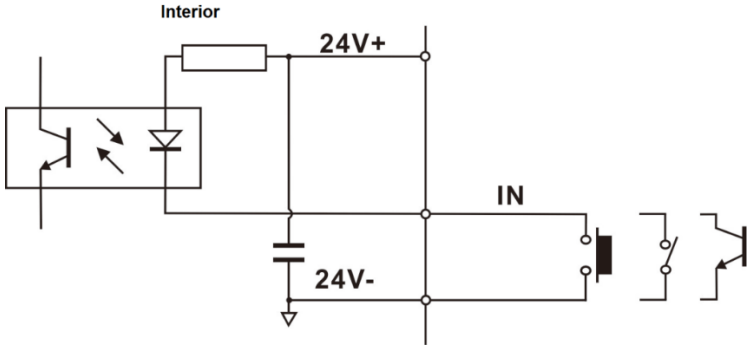
The GM9907-LD packaging controller can be connected to two resistance strain bridge sensors.When you chose the six-wired load cells, you must bridge the SN+ with EX+ and bridge the SN- with EX-.



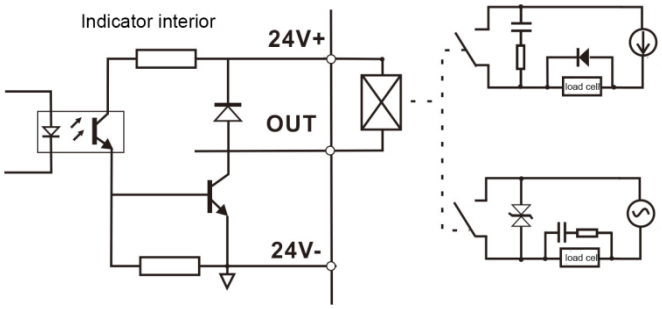
EX+: Excitation+ **EX-**: Excitation- **SN+**: Sense+ **SN-**: Sense- **SIG+:** Signal+ **SIG-**: Signal-

2.3 I/O Port Connection

GM9907-LD bagging controller controls 28 lines I/O (12 input and 16 output). It uses opto-electronic isolation technology to transfer data. The I/O signal input is low level effective, and the output is open-collector mode. The driving current can reach 500mA and the full load current is up to 3A, and Terminal connection is shown as below:



I/O Module Input port diagram

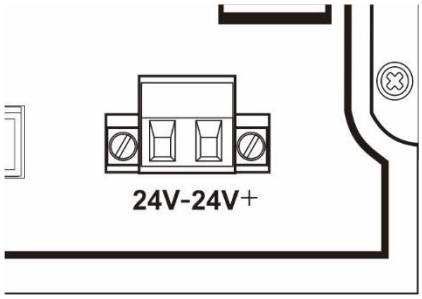


I/O Module output connection diagram

I/O module value of **GM9907** is user-defined to facilitate wiring and some special applications. Please refer to section 4.8 for I/O module.

2.4 Power Supply Connection

GM9907 bagging controller use 24V DC power supply. The connection is shown in the figure below：



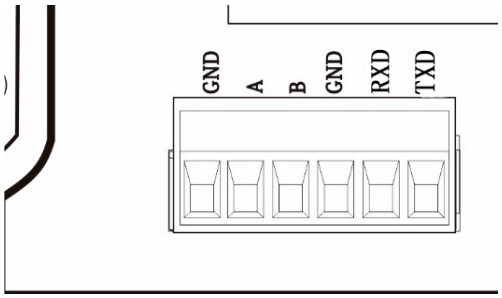
Power terminal diagram

24V+ connect DC+，24V-connect DC-.

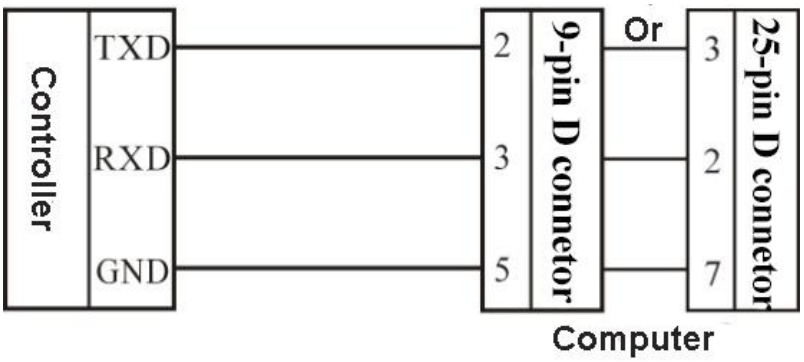
Note：this product use 24V DC power supply，use 220V AC power supply will permanently damage the controller and cause danger.

2.5 Serial Port Connection

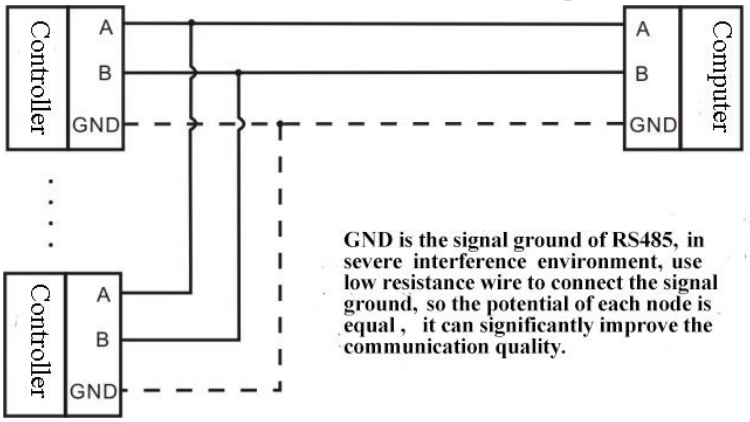
GM9907-LD can provide two serial ports. It is depicted below.One for **RS-232**（Port **TX**、**RX**、**GND**）；the other is **RS-485**，（Port **A**、**B**、**GND**）。serial ports support：**MODBUS** mode,Cont mode, Print,. **Re-ContA** and **Re-ContB** protocol



Controller and computer connection diagram:



Connection between GM9907-LD and a host computer (RS-232):



Connection between GM9907-LD and a Host Computer（RS-485）

2.5.1Troubleshooting Serial Port Faults

If the serial port fails to communicate, check:
○ Check the connection by serial port connection; Make sure the connection is correct.
The RS232 interface must be connected to all three wires (Rx, Tx, and GND).
The RS485 port must be connected to cables A and B.
○ Ensure that the connection port parameters are consistent with those of the host.
Slave ID, baud rate, data format and communication protocol must be consistent with the host computer and PLC.

2.6 Network port connection

GM9907 provides two RJ45 interfaces and supports Modbus TCP communication. Under

dual network ports, the network port is equipped with a built-in switch for easy cascading of instruments. The network port parameters can be set through the "System Maintenance" - "Communication Settings" parameter, and the corresponding Modbus communication address can refer to the Modbus address allocation in the chapter 6.3.3.3 modbus address assignment for details.

2.6.1Troubleshooting Network Port Faults

If the network port cannot communicate, check:

○ Check network port indicators.

The hardware connection is normal, and the internal communication light is steady on.

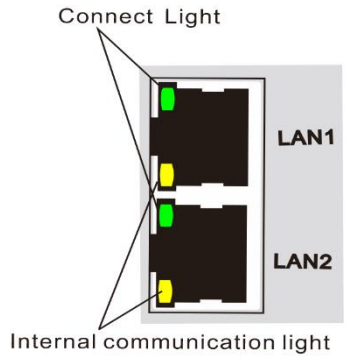
The network cable is properly connected and the connection indicator is blinking.

○ Check whether the communication protocol is consistent with the host computer and PLC.

○ Check that the meter can be pinged from the network. If not, check the hardware interface.

○ Check whether IP conflict occurs.

○ Restart the meter.



2.7 Touch Screen Calibration

The touch screen needs to be calibrated during the first use or after prolonged storage of the new product. Touch screen calibration method:

Power on GM9907 and long press any point on the touch screen. You can enter the touch screen calibration interface through the touch button set by the system parameters or by holding down the blank space for 3 seconds. The interface displays a cross cursor. Place your finger accurately at the center point of the cross cursor and hold it for at least 1 second to automatically enter the next calibration point. Long press and hold the center point of the crosshair in sequence, following the changes in its position, until all five points have been calibrated. Click on "Confirm calibration" to return to the system settings interface, and then click on "Enter Operating Environment" to enter the startup login interface.

3. User Permission Description

In order to prevent wrong operation causing **GM9907-LD** working improperly, it provides three rights (operators, Technician and Administrators)： System administrator can perform all operations (not open to users). The operator and technician rights restrictions are as follows:

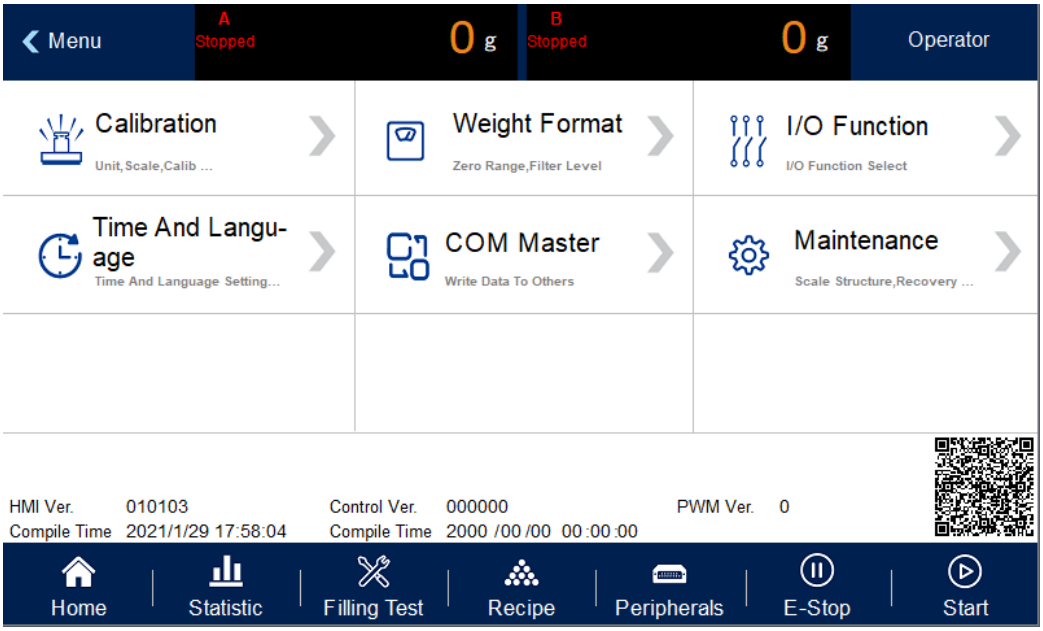
Permission	Operation
Operator	Can check all the parameters.
	Can set recipt parameter's value parameters and time parameters, I/O module test.
	Can set batch in main menu, and the total quantity of dispatching.
Technician	All operator privileges are available.
	Can calibration,start over/under, Free Fall correction and Adaptive function,set weight parameters,I/O module define,set language and time,correct computer mode parameter.
	Can modify opend Peripherals parameters

Permission description：

- Controller default operator log on.
- Swift permission, can click the parameter item that needs permission, and enter the password of the corresponding technician (**Password:0000**) or administrator (**Password:000000**) in the pop-up box to log in successfully.
- Click the parameter item that needs permission, and the current user's password can be modified in the pop-up box
- In the【Display Style】parameter of 【Maintenance】, set the permission exit time, which is used to limit the login duration of technicians and system administrators. When the permission exit time reaches, the privileges of the current technicians or system administrator will be returned to the operator privileges
- Multi-user login function description: In the【Display Style】parameter of 【Maintenance】, the multi-user login function is enabled, set the number of users to log in, and select users to log in when power on.

4. Menu

Click the menu to check or revise parameters.The menu is shown as follows.



- Click each parameter item to view and set the home parameter information under the current parameter item.
- Click top left of interface to exit the current interface and return to the previous page.

Parameter	Parameter list	Description
Calibration	Weight calibration	Use weight to calibrate
	A material Calibration	Use material to calibrate
	B material Calibration	
Weighing parameters	Zeroing range/Filter level setting	Set weight relevant parameters, such as zeroing range, stable parameters etc.
I/O Module	Input definition	Input port definition.
	Output definition	Output port definition.
	IO Test	Quickly access the hardware testing interface.
Time and language	Language setting	Default English, Mandarin and English optional
	Time setting	Screen time setting
COM Master	Master	Write Data To Others
	Fill Gate Driver	Fill Gate Driver parameters setting
	Clamper mode	Clamper motor parameter setting

Motor(Scale Structure setting motor mode)	DISC Parameter	DISC motor Parameter setting
Maintenance	Scale Structure	Scale Structure, Working Mode etc relevant setting
	Peripherals Select	Peripherals Select ON/OFF setting
	Communication	Serial ports, ethernet, print etc setting
	Logic Program	Aux.logic parameter, 6 group output logic parameter setting
	Reset	All parameters reset to factory setting
	Hardware Test	To test all input and output connection.
	Display Style	Display time setting
	Firmware Update	Firmware Update
	System Info.	Check calibration times and check code

4.1 Calibration

Calibration should be done when a GM9907-LD controller is used at the first time, or the preset parameters can't meet the user's demand due to change any part of the weighing/bagging system.

To enter calibration parameter need to input correct password as it is protected by password per International Standard. Calibration password can be modified by clicking any parameter requiring permission. (Initial password: **0000**)

Calibration interface, provide two kinds of calibration methods: weight calibration and material calibration.The calibration steps are as follows:

Calibration parameter	**Item parameter**	**Description**
	1.Unit	Initial value: **kg**. Option: **g/kg/t/lb.**
	2. Decimal point	Initial value: **0.00**. Option: 0~0.0000.
	3 Minimum division	Initial value: **1**. Option: **1/2/5/10/20/50**.
	4 Full capacity	Initial value:**100.00**; full capacity≤minimum division*100000
Weight Calibration	Calibration function is the calibration method using weights in site.The calibration steps for the weights of A and B are as follows Step 1： According to the demand to choose units, decimal point, indexing value and other weighing parameters. Step 2： Calibrate scale A and scale B separately.Empty the bucket and click 【Empty scale calibration】.This step is the zero point of calibration, requirements are: the bucket is empty, the scale body is stable. Step 3： Put the weights on the weighing table, and when the weighing table is stable, click【Weight Calibration】, input the weight of the weights in the bullet frame, and click 【OK】 to complete the calibration of the weights.	

A.B material calibration	Material calibration function is in the site is not convenient to use the weight calibration method. Steps as follow: **Step1**：Clear the scale table, wait for the mV to stabilize, then click【Empty scale calibration】. At this moment, the number on the right is the current millivolt display.This step is to zero point of calibration, requirements are: bucket is empty, the scale body is stable. **Step2**:Click 【Manual Feeding】, then the feeding door opens, add some materials to the metering bucket, click【Manual Feeding】again, close the feeding door.(Note: if the manual feeding time (Step2 time setting is manual feeding time) is not set to 0, the feeding door will be automatically closed after the manual feeding time is up). **Step3**：Click【Record】to display the gain millivolts after manual Feeding. **Step4**:Click【Discharge】.When the discharge door opens, the background will record the current relative millivolt.Weighing the discharge material with electronic scale and recording the data. **Step5**:Click【Calibrate】to input the weighing data and click OK.Material calibration is finished.

4.2 Recipe Parameter

Click the formula on the main interface to enter the 40 formula selection interface, which displays the recipe number, name and target value.

- Click the recipe number button on the right to switch the recipe number.
- Click on each recipe bar to enter the corresponding recipe parameter interface.
- Click the upper left to return to the upper interface

Parameter		Description
Filling parameters (used to set parameters related to packaging weight values)		
1. Individual Target Mode		Optional on and off.when is on, the target values of A and B are set respectively; when is off, sets the total target value.Initial value: off.(Valid in hopper scale and None-hopper scale mode)
2. Total target value		"Individual Target Mode" When turn to off is valid. (Valid in hopper scale and None-hopper scale mode)
3. Zero zone value		In quantitative process, if the weighing value ≤ Near Zero Band, starts discharge delay timer.
4.Scale A	a.A.Target value	"Individual Target Mode" When turn on is valid
	b. Co-Fi Remain	In quantitative process, if the weighing value ≥ target value – Coarse Flow leading quantity, closing Coarse Flow fill.
	c. Me-Fi Remain	In quantitative process, if the weighing value ≥ target value – Medium Flow leading quantity, closing Medium Flow.
	d. Free Fall	In quantitative process, if the weighing value ≥target - free fall value, closing Fine Flow.
5.Scale B	a.B.Target value	"Individual Target Mode" When turn on is valid
	b. Co-Fi Remain	In quantitative process, if the weighing value ≥ target value – Coarse Flow leading quantity, closing Coarse Flow fill.
	c. Me-Fi Remain	In quantitative process, if the weighing value ≥ target value

		– Medium Flow leading quantity, closing Medium Flow.
	d. Free Fall	In quantitative process, if the weighing value ≥target - free fall value, closing Fine Flow.
Filling Timers (used to set time - related parameters in the feeding process)		
1.A.COMP. Inhibit Timer(Co-F)		At the beginning of the quantification, the coarse feeding has been effective during this time to avoid overshooting without weight judgment Initial value：900； range：0~9999 (ms)
2.A. COMP. Inhibit Timer(Me-F)		After the end of coarse feeding, in this period of time, in order to avoid overcharging without weight judgment, adding has been effective. Initial value：900； range：0~9999 (ms)
3.A. COMP. Inhibit Timer(Fi-F)		After the end of the Medium feeding, in this period of time, in order to avoid overshoot without weight judgment, fine feeding has been effective. Initial value：900； range：0~9999 (ms)
4.B. COMP. Inhibit Timer(Co-F)		At the beginning of the quantification, the coarse feeding has been effective during this time to avoid overshooting without weight judgment Initial value：900； range：0~9999 (ms)
5.B. COMP. Inhibit Timer(Me-F)		After the end of coarse feeding, in this period of time, in order to avoid overcharging without weight judgment, adding has been effective. Initial value：900； range：0~9999 (ms)
6.B. COMP. Inhibit Timer(Fi-F)		After the end of the Medium feeding, in this period of time, in order to avoid overshoot without weight judgment, fine feeding has been effective. Initial value：900； range：0~9999 (ms)
7. Filling Start Delay		In the with bucket mode, at the beginning of the quantitative process, after this delay time, the controller will conduct stability assessment and zero clearance (if it does not meet the conditions of zero clearance interval, then it will not be stable and zero clearance), and then start the feeding process; Without bucket mode, after the bag clamping is completed, after this delay time, the controller is stabilized and peeled Initial value：**0.5**； range：**0.0~99.9**（**s**）
8.Result Waiting Timer		When the waiting mode is selected as " Time Delay ", fine feeding is turned off (or the over/under is turned on and the over/under alarm is over), and the setting is started. After this holding time, the setting is considered to be over and the next process is entered. Initial value：**1.0**； range：**0.0~99.9**（**s**）
9. Discharge Delay Timer		In the discharge process, when the weight value of the scale bucket is less than the zero zone value, the delay is started, and the discharge signal is closed after the delay. Initial value：**0.5**； range：**0.0~99.9**（**s**）
10. DISC Interlock Timer		In the bucket combination mode, the discharge interval time value of balance A and B.

	Initial value：**0.5**； range：**0.0~99.9**（**s**）
11. Hanger Up Delay Timer	In the no-bucket mode, the delay is executed after the rise signal is issued. Initial value：**0.0**； range：**0.0~99.9**（**s**）
12. Hanger Down Delay Timer	In no-bucket mode, the waiting delay is started after the end of the delay Initial value：**0.0**； range：**0.0~99.9**（**s**）
13. Bag Locked&Unlocked after Delay Timer	After giving the bag clamping signal, after this delay, the controller determines that the bag clamping action is completed. After clamping/loosening the bag, it is not allowed to clamp/loosen the bag again during this time. Initial value：0.5； range：0.0~99.9 (s)
14. Unlock Bag Pre-Delay Timer	After the discharge of bucket mode is finished, the unlock bag signal is output after this delay time. After the completion of the no-bucket mode setting (patting the bag), the unlock bag signal is output after this delay. Initial value：**0.5**； range：**0.0~99.9**（**s**）
15. Supplement Empty On Timer	No hopper mode is effective. Scale A detects that the feeding level is effective after the bag is clamped, and then scale B also clamps the bag within this time. In this case, even if the feeding level is invalid, then scale B should also start feeding Initial value：**4.0**； range：**0.0~99.9**（**s**）
16. DISC Compleeted Delay Timer	In the bucket scale and bulk scale modes, after the unloading delay ends, the unloading completion signal will output the time. Initial value：**0.0**； range：**0.0~99.9** (**s**)
Over/Under alarm parameter setting(Used to set parameters related to over/under tolerance alarm reminders)	
1. Over/Under detection ON/OFF	ON/OFF. Set to ON,Judge over/under when in quantition process.
2.Over/Under pause ON/OFF	ON/OFF. If set ON, the controller will stop if over or under. Input emergency stop and return to stop status, clear alarm information. Or input clearing alarm, press ENTER to procees quantitation.
3. Over/Under detection Timer	When the function of over/under is turned on, the time is started for over detection after the material feeding of each scale is finished. After the delay, the controller will stabilize and output over/under Initial value: 1.0. Range: 0 ~ 99.9s. （**s**）
4.Over value	In value process, if the weighing value ≥ target value+ OverLimit Value, judged as OverLimit. Initial value: **0**.
5. Under value	In value process, if the weighing value ≤ target value- UnderLimit Value, judged as UnderLimit. Initial value: **0**.
6.Supplement material ON/OFF	Supplement material judgement ON/OFF. ON: Slow jogging of material when under. (According to supplementary times). OFF: Not supplement materials.
7.Effective supplement time	Effective jogging time within a cycle period. Initial value: **0.5.** Range: **0.0 ~ 99.9s.**

8.Ineffective supplement time	Ineffective jogging time within a cycle period. Initial value: **0.5**. Range: **0.0 ~ 99.9s.**
9.Supplement material times	If under, start to supplement materials as per setting times. Initial value: **1**. Range: **1~99**.
Free fall (Used to set parameters related to automatic adjustment of free fall)	
1.Free fall correction ON/OFF	Correct according to actual falling materials.
2 Correction sampling times	Catch the average of free fall value and set as correction basis. Initial value: 1. Range: 1~99.
3.Free fall correction range	When this drop value exceeds the set range, it will not be included in the arithmetic average range. Initial value: 2**.0**. Range: 0.0 ~ 9.9**(**Percent of the target)
4.Free fall correction magnitude	Every fall correction magnitude; Option: **100%, 50%, 25%**. Initial value: 50%.
Adaptive	
1. Adaptive ON/OFF	Adaptive function, open the switch after the operation process automatically adjust the controller coarse, fine, increase the amount of advance and stop time. Optional, Off, Double speed, Three speed. Initial value: Off. (Note: 1. Free fall correction and adaptive function cannot be turned on at the same time. If the adaptive function is enabled, the fall correction function must be turned off. 2. When the first scale adapts to start, it must ensure that the scale body is stable and the current weight is zero.)
2. Adaptive Level	The lower the grade, the faster the feeding speed, the relatively lower the accuracy. Initial value：**3**；range：**1～5**
3.Parameters update ON/OFF	When opened, the change value of coarse, medium and fine plus advance quantity will be updated to the value of quantitative parameter;When off, quantitative parameter values cannot be updated.
Other	
Multiple scales with buckets parameters	
1.Binyes Multi-Scale ON/OFF	(Currently, only supports dual scales with bucket AB, separate scale A, and separate scale B with bucket. The target value needs to be set to be greater than the maximum capacity of a single bucket for this parameter to be visible.) Initial value: OFF.
2. Return valve method	**Close Return Valve After Fill：** After the unloading delay, the output of the return valve is invalid. **Close Return Valve After Unlock Bag：** After loosening the bag, the return valve output is invalid. Initial value: **Close Return Valve After Unlock Bag**
3. Blowing Mode	Air Blow Before Up Delay：Measure the bracket upwards and blow air simultaneously for output. Air Blow After Up Delay：After the delay time of walking up the

	bracket, blow air. Initial value:Air Blow Before Up Delay
4.Air BlowTimer	Blower blowing output time. Initial value: 0.5；Range：0.1～99.9.（Unit：s）
5.Lifting Hook Reset Delay	During operation, if the hanging bag output is invalid for a certain period of time, it will continue to output effectively. Initial value:**0.0**；Range：**0.0～99.9.**（Unit：s） Note: When the parameter is not set to 0, the hanging bag output will remain invalid for this time and continue to be valid. (The first scale of the instrument needs to manually give a hanging bag signal for operation) When the parameter is set to 0, the instrument requires a bag hanging signal before starting to feed each time.
6.Hanger Rise PreDelay Time	In the mode of multiple scales with buckets, this delay is executed after the rising signal is sent out. Initial value: **0.0**；Range：**0.0～99.9**.（Unit：s）**.**
7. Hanger Drop PreDelay Time	In the mode of multiple scales with buckets, the delay will be activated after the quantitative delay ends. Initial value:**0.0**；Range **:0.0～99.9.**（Unit：s）
8.Hook Up For Release	ON：Open the decoupling up switch。OFF：Decoupling up switch closed. Initial value: OFF
9.Pre-delay Of Hook Up	After decoupling, it is necessary to delay the time frame for the effective output of the uplink support. Initial value:0.0s Range：**0.0～99.9**.（Unit：s）
10. Hook Up Time	After decoupling and executing the upward movement, the output of the upward bracket needs to continue for this time. Initial value:0.0s Range：**0.0～99.9**.（Unit：s）
11. Hook Up Pause Time	After the decoupling execution is completed, it is necessary to wait for this time before descending (the bracket output is invalid). Initial value：0.0s Range：**0.0～99.9**.（Unit：s）
Fast Mode Parameters(Parameters can be set under the structure of the scale body with or without a bucket scale)	
1.Fast Mode ON/OFF	“ON/OFF” is optional, and setting it to" On "will activate the instrument panel's fast mode function. Initial value：OFF。
2. Fast Mode Timer	Fast mode deadline. Initial value：**50**；Range：**0～1000**。（Unit：m**s**）
3. Fast Mode Weight A	Fast mode cut-off weight value A. Range：0~Full Capacity，Initial value：0
4. Fast Mode Weight B	Fast mode cut-off weight value B.Range：0~ Full Capacity，Initial value：0
5. Fast Mode Correction	Automatically adjust the number of times using fast mode. Initial value：**5**；Range：**0～10**.
6.Stabilization Timer	After activating the fast mode function, the instrument will stabilize the weighing time.

	Initial value：**100**；Range：**0～1000**。（Unit：m**s**）

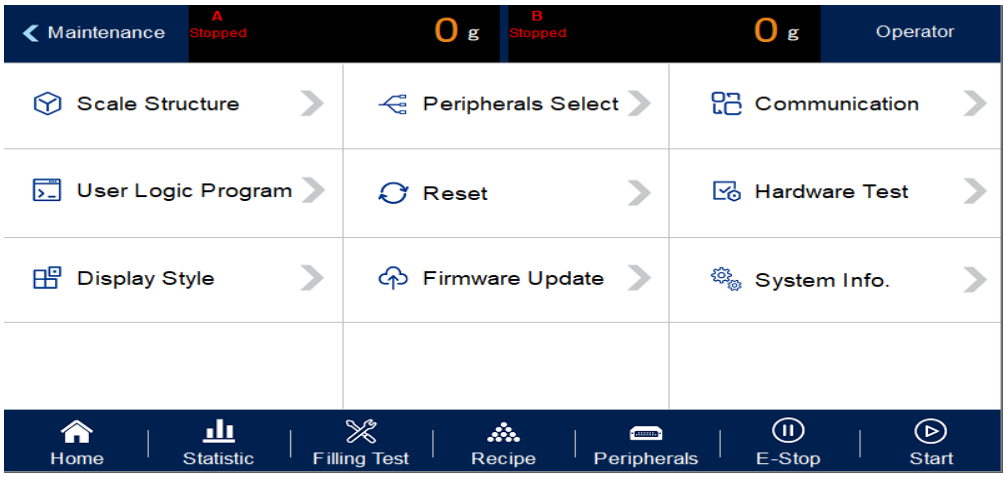
4.3 Weigh Format Parameter

In the menu interface, click the 【Weighing】 menu to enter the current parameter item to view and set the home parameter information.

Parameter		**Description**
1. Zero Range		Zero Range Initial value：50%；range：1～99（Percentage of full scale）
2. STAB Range/Timer		In the time of stability, the weight change range within this setting value is judged to be stable by the controller Stable Range initial value：2；range：0～99(d)。 Stable Timer initial value: 0.3；range：0.1～9.9（s）
3. TrZero Range/Time		Weight values within this range, the controller automatically displays zero.Is 0, zero tracking is not performed. TrZero Range initial value：**0**；range：**0～9(d)**。 TrZero Time initial value：**2.0**；range：**0.1～99.9**（**s**）
4. PWR-ON Zero		On/off is optional. When "on", the controller will automatically perform zero clearing operation (the weight in the scale bucket meets the zero clearing range).Initial value: Off.
5. Result Check Mode		Wait STAB: After the fine feeding is closed, the weight is stable and the value setting process is completed Time Delay: After the slow feeding is closed, the valuing process is completed after the fixed value holding time initial value：Time Delay
6. PreFill Zero Interval		The number of times the packaging process is completed and a zero clearance is carried out.When entering the running state, the controller is not reset during the first packaging process. initial value：**0**；range：**0～99**. （Note: This parameter is only valid for bucket packing mode and bulk scale mode）
7. Manual DISC To ACUM		Optional on/off;Set to "on", manual discharge weight value is included in the cumulative value.Initial value: （Note: This parameter is only valid for bucket packing mode and bulk scale mode）
8. Sample Rate		**A/D** Sample Rate，120 times/s, 240 times/s, 480 times/s, 960 times/s optional, initial value: 240 times/s.
9. D-Filter Strength		**AD** Digital filtering parameters: 0: no filtering;9: The filtering effect is strongest.Initial value: 7.Range: 0 ~ 9
10. Vib-Filter		secondary filtering based on digital filtering. Initial value: 0.Range: 0 ~ 9
11. Dynamic Fil-	Dynamic Filter ON/OFF	In the packaging process, whether to carry out filtering operation switch and set "on", the following parameters are valid;Initial value: on.

ter parame-ters	Filling Filter	Filtering parameters in the feeding process: 9: The strongest filtering effect. Initial value: 4; Range: 0 ~ 9.
	Result Check Fil-ter	Filtering parameters in the feeding process: 9: The strongest filtering effect. Initial value：**7**；Range：**0～9**
	Discharge Filter	Filtering parameters in the discharge process: 9: The strong-est filtering effect Initial value：**3**；Range：**0～9**。
12. Result Hold		Optional on/off;Set to "on", the weight of the controller is fixed at the weight of the fixed value after the fixed value, and the real-time weight will be displayed when the weight of the discharge (loose bag) is lower than half of the target value.Initial value: OFF.
13.Run Zero Nums		Activate the reset count, this parameter only takes effect when the reset interval is set to 0. During operation, each scale performs a reset before adding material. After complet-ing the set number of times, the reset before adding material will no longer be performed. If the value is set to 0, it means that the function is not enabled. Note: When entering the first quantitative process in operation, the instrument will not reset before adding material, starting from the second scale . Initial value：**0**, Range **0～9**。
14. Delay Before Zero		Delay before resetting: In the running state, after completing the "pre feeding delay", if it is necessary to reset (when the automatic reset interval is reached or reset is started), this de-lay is added before the reset is determined to be stable. Initial value：**0.0s**, Range **:0.0～9.9s**。

4.4 Maintenance



4.4.1 Scale Structure

Item parameter		Description
2. With hopper parameter setting	**a.** Scale Structure	Net Weigher；Optional:Net Weigher/Gross Weigher / Bulk scale mode. Set corresponding parameters according to different scale structures.
	b. Working mode	A bucket is optional: A bucket AB double scale, A bucket alone A scale, A bucket alone B scale, double bucket double clip bag AB independent, double bucket double clip bag AB combination; Initial value: a bucket AB double scale.
	c. Filling control method	Single Ctrl/Combo Ctrl is optional; Initial value: Combo Ctrl. Combo Ctrl: fast feeding large, medium and small feeding port at the same time; Add medium and small feeding port at the same time feeding; Slow time small feeding port feeding. Single Ctrl: fast and large feeding port feeding; Add when the feeding port feeding; Slow time small feeding port feeding.
	d. Fill Gate Driver	0 Air Drived mode； 1 Step motor 2. Motor mode
	e. Clamper Driver	0 Air Drived mode； 1 Step motor； 2、Normal Motor(Two Pos. Signal)； 3 Normal Motor(One Pos. Signal) Default value：0 Air Drived
	f. Discharge mode	0 Air Drived mode； 1 Step motor； 2 Normal Motor(One Pos. Signal) 3 Normal Motor(Two Pos. Signal)； 4 Normal Motor Rotating Default value：0 Air Drived
	g. Manual Unlock Bag	Optional on/off; Set to "on", in operation, need to manually control unlock bag. Initial value: off.
	h. Hopper Capacity	The bucket mode is effective. The Hopper Capacity is weighed and the number of discharging times is calculated with the target value.
	i. Bag Lock Required (Manual DISC)	In the bucket mode stop state, set to "on", manual unloading, the bag clamping signal switch should be judged, after the bag clamping is allowed to discharge.Initial value: off. Note: In the dual bucket and double clip bag AB independent and double bucket and double clip bag AB combination mode, manual unloading can judge the loose bag switch is on. During unloading, the clip bag status of scale A and scale B will be detected respectively.
	l.No Position Signal For Fill Gate	In stepper motor mode, on/off is optional; Set to "on", after the switch is turned on, there is no need for a signal to close the feeding door.
	m. No Position Signal For Clamper	In stepper motor mode, on/off is optional; Set to 'on', after the switch is turned on, the loose bag does not require a signal to be in place.

	n. No Position Signal DISC Gate	In stepper motor mode, on/off is optional; Set to "on", after the switch is turned on, the unloading door does not require a signal to be in place.
	o.MasterDisc Lock Switch	When opened, it indicates the main machine when multiple scales are interlocked for unloading, and when not opened, it indicates the slave machine when multiple scales are interlocked for unloading. Host controls slave unloading.
2. Without hopper parameter setting	**a.** Scale structure	Gross Weigher；Optional:Net Weigher/Gross Weigher / Bulk scale mode. Set corresponding parameters according to different scale structures.
	b. Working mode	Single A scale Without hopper, Single B scale Without hopper, A/B NoneHopper, A+B NoneHopper
	c. Filling control method	Single Ctrl/Combo Ctrl is optional; Initial value: Combo Ctrl. Combo Ctrl: fast feeding large, medium and small feeding port at the same time; Add medium and small feeding port at the same time feeding; Slow time small feeding port feeding. Single Ctrl: fast and large feeding port feeding; Add when the feeding port feeding; Slow time small feeding port feeding.
	d. Filling mode	0 Air Drived mode；1 Step motor feeding；2 Motor mode
	e. Clamper Driver	0 Air Drived；1 Step motor；2 Normal Motor(Two Pos. Signal)；3 Normal Motor(One Pos. Signal) Default value：0 Air Drived
	f. Manual Unlock Bag	Optional on/off; Set to "on", in operation, need to manually control loose bag.(Note: in the combinatorial mode of AB without bucket, this parameter and the allowable loose bag switch in operation cannot be opened at the same time) Initial value: off.
	g. G/N Packing	Gross/Net mode is optional;. In the net weight packaging mode, the tare weight is cleared at the beginning of quantification, and the quantitative packaging process is carried out with the net weight value. Initial value: Net Mode.
	h. Unclock Bag(None Hopper)	Loosen bag mode optional: Asynchronous,Synchronize,Simi-. Synchronize .Initial value: Asynchronous (Note: Only the combinatorial mode without bucket AB has this parameter) 1. Synchronize (Loose bag normal mode) For example, one scale has finished feeding another scale has not finished feeding, waiting for the completion of another scale at the same time after the two loose bags. If a scale has finished feeding, the other scale is not in the bag (feeding) state, then do not wait for another scale, this scale directly loose bag. 2. Simi-. Synchronize(loose bag fast mode) In this mode, scale A is placed in front of scale B.For example, scale A will directly loosen the bag without judging

		whether B is finished after feeding. After the completion of feeding, B shall judge whether A is in the state of bag clamping (feeding). If A is feeding, B shall wait for A to loosen the bag after the completion of feeding.If A is not feeding, B will loosen the bag without waiting.
	i. Disable Unlock Bag When Running	Optional on/off; Set to "on", no bucket mode, feeding, need to manually control loose bag. Initial value: off. (Note: In the combinatorial mode of AB without bucket, this parameter and manual loose bag switch cannot be opened at the same time.)
	l.No Position Signal For Fill Gate	In stepper motor mode, on/off is optional; Set to "on", after the switch is turned on, there is no need for a signal to close the feeding door.
	m. No Position Signal For Clamper	In stepper motor mode, on/off is optional; Set to 'on', after the switch is turned on, the loose bag does not require a signal to be in place.
3.Bulk scale mode parameter setting	**a.** Scale structure	Bulk scale；Optional:Net Weigher/Gross Weigher / Bulk scale mode. Set corresponding parameters according to different scale structures.
	b. Working mode	Bulk is optional: Bulk single hopper A , Bulk single hopper B, Bulk scale AB independent, Bulk scale AB Interlock; Initial value: Bulk scale AB independent.
	c. Filling control method	Single Ctrl/Combo Ctrl is optional; Initial value: Combo Ctrl. Combo Ctrl: fast feeding large, medium and small feeding port at the same time; Add medium and small feeding port at the same time feeding; Slow time small feeding port feeding. Single Ctrl: fast and large feeding port feeding; Add when the feeding port feeding; Slow time small feeding port feeding.
	d. Filling mode	0 Air Drived mode；1 Step motor feeding；2 Motor mode
	e. Discharge mode	0 Air Drived mode；1 Step motor；2 Normal Motor(One Pos. Signal) 3 Normal Motor(Two Pos. Signal)；4 Normal Motor Rotating Default value：0 Air Drived
	f. Hopper Capacity	The bucket mode is effective. The Hopper Capacity is weighed and the number of discharging times is calculated with the target value.
	g.Flow window length	Sampled times is used to calculate the current flow value. Initial value：**5**；range：**1～6.**
	h.No Position Signal For Fill Gate	In stepper motor mode, on/off is optional; Set to "on", after the switch is turned on, there is no need for a signal to close the feeding door.
	i. No Position Signal DISC Gate	In stepper motor mode, on/off is optional; Set to "on", after the switch is turned on, the unloading door does not require a signal to be in place.

4.4.2 Peripheral ON/OFF

This parameter sets the switch of instrument peripheral. If set on, peripheral parameters of the main interface can be set. Refer to Chapter 4.5 for specific peripheral parameters. Patting bag, sewing machines, conveyors, and coding are invalid in bulk material mode.

Item parameter	Description
Patting Mode	Patting bag mode selection: Initial value: Disable. Optional: Bucket mode: Disable/When Hold(patting bag after fixed value) is optional When the multi scale switch is turned on, Disable and When Filling is optional; No bucket mode: Disable /When Filling (after fixed value beat bag)/All Time(feeding in the bag/feeding in the bag after fixed value all patting bag)
Sewing ON/OFF	Whether to turn on the function of the sewing machine.On and OFF are optional. When turn to ON, the peripheral device can start to sew the bag, and the parameters of the sew machine can be set.
Conveyor ON/OFF	Whether to activate the conveyor function. Initial value: close; Close, 1 Conveyor, 2 Conveyor, and 3 Conveyor are optional. When it is a level 1 conveyor/level 2 conveyor/level 3 conveyor, the external equipment starts the conveyor function, and the conveyor parameters in the external equipment can be set. (Note: The use of level 2 and level 3 conveyors is only allowed when the bucket weighing function is turned on, otherwise only level 1 conveyor is allowed.)
Coding ON/OFF	Whether to enable the coding function.On and off are optional. When on, the peripheral starts coding function, and the coding parameters can be set.
DISC Shaking Mode	Whether to open the discharge shaking switch.Optional :Close,Individual Shaking ,DISC Shaking. When not turned off, the external device enables the unloading vibration function, and the unloading vibration parameters can be set.
Auxiliary Pulse ON/OFF	Whether to enable auxiliary pulse function.On and off are optional. When on, this function is enabled by peripherals and auxiliary pulse parameters can be set.
Fill&DISC Monitor	Whether to turn on the Fill&DISC Monitor.On and off are optional. When on, the peripheral enables this function, and the timeout alarm parameter can be set.

4.4.3 Communication Setting

GM9907 provides two serial communication interface; See Section 2.5 for the definition of serial port output; Correct setting of port parameters can be used for communication.

Item Parameters	Description
Serial port parameters（Serial port 1(RS232), Serial port 2(RS485)	
1. ID No.	Initial value: 1. Option: 1~99.

2. Communication mode	Initial value：**Modbus-RTU**.**Modbus-RTU** ／Print ／Continuous mode/**Re-ContA**/**Re-ContB**
3. Baud rate	Initial value：**38400**；**9600/19200/38400/57600/115200**
4. Data format	Initial value: 8-E-1 (8 data bits - even parity -1 stop bit). Option: 8-E-1/8-N-1/7-E-1/7-N-1.
5. Modbus Hi-Lo	Modbus communication mode: Initial value: AB-CD (High word first). Option: AB-CD (High word first) / CD-AB (Low word first).
Ethernet parameters	
1. Communication Mode	Fixed**: Modbus-TCP**
2.modbus-TCP Hi-Lo	Initial value **AB-CD.** Range**: AB-CD**（ Hi ahead ）/ **CD-AB**（Low word first）
3. port number	Initial value :502, Range 1~65535
4.IP	Initial value :192, Range 0~255
	Initial value :168 ,Range 0~255
	Initial value :101, Range 0~255
	Initial value :246, Range 0~255
5.MAC	**BC.66.41.9x.xx.xx**
Print parameters	
1. Auto Print	Optional on/off;When "Open" is selected, the packaging result will be automatically printed out each time the packaging is completed (the serial port is required to select "Print") Initial value: off.
2. Printer Format	Initial value：**24** columns to print；**24** columns to print ／**32** columns to print
3. Printing Language	Initial value: Chinese print; Chinese/English printing is optional
4. Print Empyt Line Nos.	Number of lines of paper after printing, initial value: 3; Optional 0 ~ 9.

4.4.4 User Logic Program

Auxiliary logic programming function, can define up to 6 sets of auxiliary logic trigger signals, and can set the effective time and output port after the auxiliary logic signal is triggered, can configure simple logic signal output for the control of other auxiliary equipment, 6 sets of auxiliary logic signals can also control each other.

Auxiliary logic programming parameter **1~6**	Parameter	Descriptions
1.User Logic type（1~6）	OFF（default）	Select the type of auxiliary logic programming signal based on the logic to be implemented.
	Delay ON	
	Delay OFF	
	Delay ON&OFF	
	ON Edge Trigger	
	OFF Edge Trigger	
2. Logic （1~6） Trigger Type	By Trigger Funnction (default)	After any one of the 1-12 channels is set as the trigger signal, the input port will be fixed as the trigger signal.
	>=or<=weight trigger	After setting the trigger condition, the current weight value is compared with the set weight threshold, and the output is triggered when the condition is met.

	IN port 1~12	If any path in the input port from 1 to 12 is set as the trigger signal, the input can be either the trigger signal or the function signal of the input port.
	I/O Module output define	After the trigger signal is set as "an internal function signal", the output is triggered according to the function signal.
3. Trigger Function(IN)	**IN1~12**	Initial value：None Select the input port of the ON/OFF corresponding to the function signal. The input port "0 undefined" means that the function is not defined.
4. Trigger Function(OUT)	**OUT1~16**	Initial value：None Select the output port of the ON/OFF corresponding to the function signal. The output port "0 undefined" means that the function is not defined.
5.Delay ON Time	Unit:s	Initial value: 0.0； Range: 0.0~99.9s After the trigger signal is valid, the logic output signal is valid only after the delay.
6. Delay OFF Time	Unit:s	Initial value: 0.0； Range: 0.0~99.9s After the trigger signal is invalid, the logic output signal will be invalid after the delay.
7. Output ON Timer	Unit:s	Initial value: 0.0； Range: 0.0~99.9 s The duration after the logic output signal outputs a valid signal becomes invalid at the end of time.
8.Logic Trigger Weight	Consistent with the calibration unit	Initial value：0.0； Range：0.0~Maximum range Set the weight value, compare the current weight with the threshold weight, and trigger when the weight value trigger condition is met.(valid when the trigger signal selects ">= or <= weight value")

Delay ON

● When selected to delay connection 【By Trigger Function】, the operation is as follows,

1. Set parameters and I/O Module: type select 【Delay ON】, if choose 【By Trigger Function】trigger input port is defined as "1" (I/O Module input port 1 is shown as "auxiliary logic trigger input 1"), logic output port is defined as "1" (I/O Module output port 1 is shown as "auxiliary logic output 1"), set【Delay ON Time】for 2 seconds.

2. Operation: trigger signal input 1 valid, start the delay on time, and continue to be valid until the delay on time 2s ends, the logic output signal port 1 outputs valid, until the trigger signal input 1 is invalid, the logic output signal port 1 also becomes invalid. Refer to diagram below

●When selected to delay on 【Input Port 1-12】, operation is as follows,

1. Set parameters and I/O Module: trigger signal choose “input port 1 "(can see I/O Module input port 1 is shown as " the definition of the original unchanged”, assuming the original definition is started, the function of the input port 1 can be" started "or" signals trigger”), logic output port is defined as 1 (can see the I/O Module output port 1 is shown as" auxiliary logic output 1 "), set the【Delay ON Time】as 2 seconds.

2. Operation: trigger signal input 1 valid (start is also valid, the output of the controller operation is valid), start the delay connection time, and continue to be valid until the end of the delay connection time 2s, the logic output signal port 1 is valid, until the trigger signal input 1 is invalid, the logical output signal port 1 is also invalid.The controller will continue to run until an emergency stop signal is given.

●When select delay on I/O Module output define, operation is as follows,

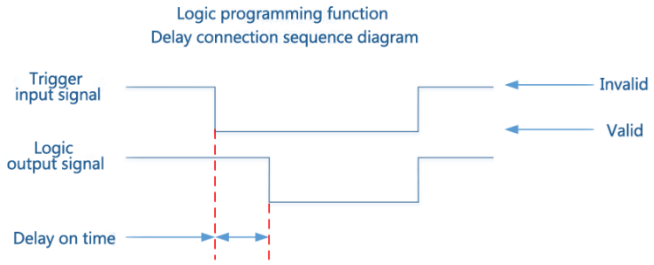
1. Set parameters and I/O Module: trigger signal is "run" (I/O Module output can be defined or not), the logic output port is defined as 1 (can see the I/O Module output port 1 is shown as auxiliary logic output 1), and the 【Delay On Time】 is set to 2 seconds.

2. Operations: after input "start", "run" the output signal is valid, begin 【delay on time】, valid until 2 s delay on time after the logic output signal output port 1, until the "stop or pause" and effective "run" after the output signal is invalid, logic output signal port 1 void.

●When select delay on >= or <= weight value trigger, operation is as follows:

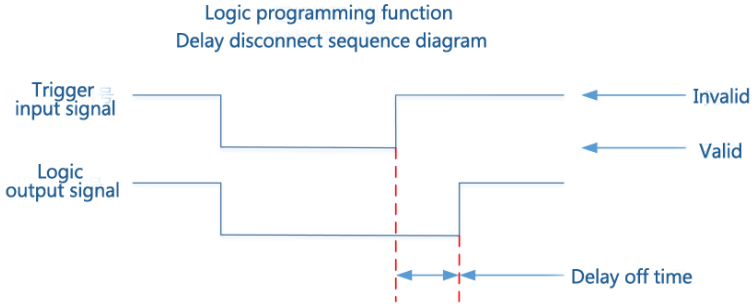
1. Set the corresponding threshold weight, logic output port is defined as 1 (it can be seen that the output port 1 of the I/O Module is shown as the auxiliary logical output 1), and the 【Delay ON Time】is set to 2 seconds.

2. Operation: when weight value >= or <= logic 1 threshold weight is set to valid, starts 【Delay ON Time】, It will remain in valid until the delay time 2s is over, logic output signal port 1 outputs valid, Port 1 of logic output signal is not valid until the current weight < or > logic 1 threshold weight is set.



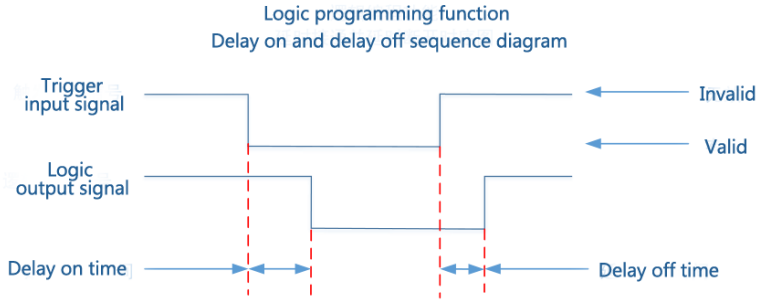
Delay OFF

Relevant parameters：type selections【Delay OFF】, choose【Trigger Type】, set【Trigger input port】,【Logic output port define】,【Delay OFF Time】. Operations refer to “Delay ON”. Output functions as below:



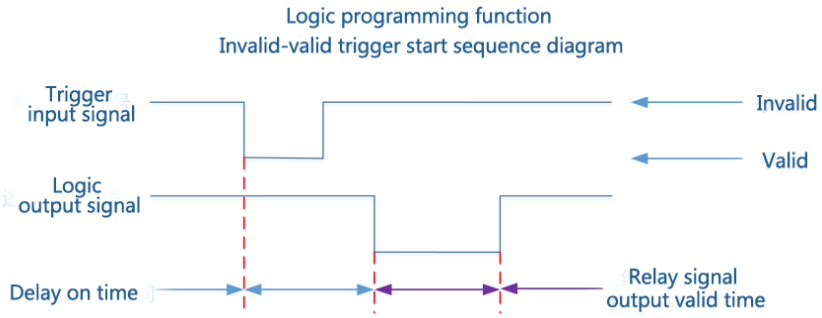
Delay on and delay off

Relevant parameters： type selections【Delay ON&OFF】, choose【Trigger Type】, set【Trigger input port】,【Logic output port define】,【Delay on】,【Delay off】. Operations refer to “Delay on”. Output functions as below:



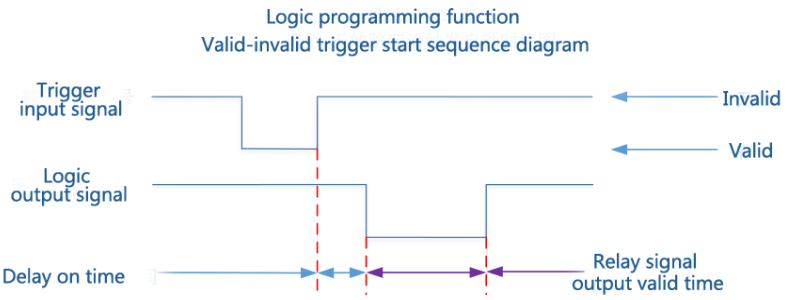
ON Edge Trigger

Relevant parameters： type selections【ON Edge Trigger】, choose【Trigger Type】, set【Trigger input port】,【Logic output port define】,【Delay on】.Operations refer to “Delay on”. Output functions as below:



OFF Edge Trigger

Relevant parameters： type selections【OFF Edge Trigger】, choose【Trigger signal】, set【Trigger input port】,【Logic output port define】,【Delay on】. Operations refer to “Delay on”. Output functions as below:



4.4.5 Reset

Administrators and system administrators can restore and backup data through the restore factory in "Maintenance".

1. Reset All(Except Calibration)	Click this item to restore all parameters of the meter (except calibration parameters) to factory setting values.
2. Reset All	Click this item to restore all parameters of the controller to factory setting values.
3. Reset Calibration	Click this item to restore the calibration parameter value to factory setting value.
4. Reset Weight And Scale Structure	Click this item to restore the property parameters of weighing and weighing body to the factory setting value.
5. Reset Recipe	Click this item to restore formula parameter value as factory setting value.
6. Reset Communication	Click this item to restore communication setting parameter value is factory setting value.
7. Reset Peripherals Parameter	Click this item to restore peripheral parameter values and peripheral switch to factory setting values.
8. Reset Motor Parameter	Click this item to restore motor parameter value to factory setting value.
9. Reset I/O Function	Click this item to restore switch value definition parameter value as factory setting value.
10. Reset User Logic	Click this item to restore logic programming parameter values to factory setting values.
11. Parameter Backup	Click this meter to backup the current parameter setting values.
12. Recovery From Backup	Click this meter to restore the parameter value to the latest backup value.
13. Delete Parameter Backup	Click this meter to delete the backup parameters.

4.4.6 Hardware Test

This can check whether the output and input interfaces of the controller are normally connected with external devices through IO test. Before I/O test, I/O test switch on, and then I/O test.

Output Test: under the IO test interface, start the output test, that is, after clicking the corresponding output port button, the color of the interface port will light up. The output state of the corresponding external connection should be valid. If it is invalid, it indicates abnormal connection.

Input Test: in the IO test interface, when the external input signal is valid, the corresponding input port color under the interface will be lit up to green.When the external input is valid, the interface has no response, indicating abnormal connection. Check the power input and wiring of the I/O Module, etc.

4.4.7 Display Style

Display Style	**1.** Screen Save Time	Can set the time to turn off the screen. Default: Always ON; can choose Always ON, 60s, 10min, 30s, 5 min, 30 min.
	2. MainPage Style	Optional: Easy Data Style and Easy Test Style. Default: Easy Data Style.
	3. Permission Auto Logout	Permission exit time setting. can choose 5 min, 10 min, 20 min,30 min.
	4. Multiple User Login	Enable multi-user login function to set the number of users logged in
	5. Number Of Users	The multi-user login switch is turned on to set the number of users logging in
	6.Backlight Switch	The screen goes out when the backlight is turned on.
	7.Backlight Length of Time	Turn on the backlight and set the backlight time. When the time is over ,the screen goes out .Click the screen to re-light up. Initial value: 15s； Range: 15~1800.(s)
	8. Clear Sum	Clear accumulated rights. Initial value:Operator； Operator, Technician, Administrator.

4.5 Peripheral Parameter

Click the 【Peripheral】menu bar in the main interface (Note: the corresponding peripheral switch in system maintenance parameters is turned on, and the corresponding peripheral parameters can only be seen)

Parameter	Description
Patting (Pat bag parameters setting)	
1. Patting Mode	Pat bag after hold value;(The peripheral switch mode of this item is: the following parameters can only be used after the set value)
2. Patting PreDelay Timer	When start to pat bag, output is valid after this delay time.. Initial value: 0.5 range: 0.0 to 99.9s.
3. Patting ON Timer	Pat bag effective time through a cycle. Initial value: 0.5, range: 0.0 to 99.9 s.
4. Patting OFF Timer	Pat bag ineffective time through a cycle. Initial value: 0.5, range: 0.0 to 99.9 s.
5. Patting Times (HOLD)	Pat bag times setting after valuing. Initial value: 4, range: 0 ~ 99.
6. Extra Patting Timer	Only applied in no hopper mode. One extra ON timer will be added when patting completed. **Initial value: 0.Range: 0.0~99.9s.** (**Note:** After patting bag, bag unlocked delay timer should be longer than extra ON timer to ensure bag unlocked after patting bag.)

7. Start-Up Weight	Start to pat bag once value reach initial weight. Initial value: 0, range: 0~full capacity.
8. Patting Times (Filling)	The number of pats corresponding to the weight of the pats is valid in the no-bucket mode. The number of pats is set as a parameter in feeding. If set to 0, no pats are allowed.(Note: When the feeding process enters slow feeding, force the end of the punching bag in feeding, no matter whether the punching bag is completed or not) Initial value: 0, range: 0 ~ 99.
Sewing/Conveyor Parameters	
1. Sewing ON/OFF	Set to "ON",start sewing function
2. Sewing Start Delay Timer	After sewing input valid, delay this time, sewing output valid. **Initial value:0.5s** range **0.0~99.9s**
3. Sewing ON Timer	Sewing output valid time. **Initial value: 4.0s Range: 0.0~99.9s**
4. Cutter Start Delay Timer	Cutter output valid time. **Initial value: 0.5s** **Range:0.0~99.9s** After sewing ON Timer is over,starts Cutter Start Delay Timer.Initial value 0.5s range 0.0~99.9s
5. Cutter ON Timer	Cutter output valid timer **Initial value:0.5s Range: 0.0~99.9**（**s**）
6. Sewing Stop Delay Timer	Cutter work finished, sewing starts, when Sewing Stop Delay is over, it stops. Initial value: **0.5s** Range:**0.0~99.9s**
7. Sewing Delay Timer	Prevent the abnormal operation of the sewing machine caused by the photoelectric jitter of the machine starting.During the de-shaking time, the photoelectric jitter of the baling machine, but at this time, the output of the baling machine is still valid Initial value：**0.3** Range：**0.0~99.9** （**s**）
8. Conveyor ON/OFF	ON/OFF. With conveyor output function if set ON. Initial value: OFF. Valid in no hopper mode.
9. Conveyor 1 Start Delay Timer	In no hopper mode, Conveyor start completed after this delay timer. Initial value: **0.5**, range: **0~99.9**s.
10. Conveyor 1 Running Timer	In no hopper mode, conveyor running time setting. Initial value: **4.0** range: **0 - 99.9**s.
11. Conveyor 2&3 Max Run Time	2/3 of the running time of the conveyor. Conveyor 2/3 running time=Conveyor 3 running time, Conveyor 2 running time=Conveyor 2/3 running time - Conveyor 1 running time Initial value:**30.0** range: **0 - 99.9**s.
12. Scale B Traffic void Delay	In A+B NoneHopper and A+B Dual Clampers mode, there is a delay in filling to scale B, which in order to prevent the immediate filling of the bag after bag locked and causing the bag

	below to withstand the filling bag. Initial value: **2.0** range: **0 - 99.9**s.
Coding/ DISC Shaking Parameters	
1. Coding ON/OFF	ON/OFF. Controller has coding output function if set ON. Initial value: OFF.
2. Coding Start Delay Timer	Bag locked completed, coding output is valid after this delay. Initial value: **0.5**, range: **0.0 ~ 99.9**s.
3. Coding Timer	Coding output effective time. Initial value: **0.5**, range: **0.0 ~ 99.9**s.
4. Disable Fill/Discharge When Coding	ON/OFF. Not allow to filling output (no hopper mode) or discharging output (with hopper mode) in coding process. Initial value: OFF.
5. DISC Shaking ON/OFF	When set to "ON", when discharge starts shaking function
6. DISC ON Timer	Discharge patting is on; the valid discharge time is the time from the output discharge signal to the discharge completion when the discharge delay is started. After discharge exceeds the valid time of discharge, discharging patting is started. Initial valid:2.0s，Range: 0.0~9.9s
7. DISC Shaking ON Timer	**Initial value: 0.5s，Range:0.0~9.9s （s）**
8. DISC Shaking OFF Timer	**Initial value: 0.5s，Range:0.0~9.9s （s）**
9. DISC Shaking Times	Initial value: **10**，Range: **0~99**
Auxiliary Pulse	
1. Auxiliary Pulse ON/OFF	When set to "ON"，Auxiliary pulse start
2. Auxiliary Pulse 1 Execute Time	Total execution time of auxiliary pulse 1. If it's 0, it loops forever，Initial Value 0，range 0.0~999.9s（**s**）
3. Auxiliary Pulse 1 ON Time	Initial value:10.0s，Range:0.0~999.9s （s）
4. Auxiliary Pulse 1 OFF Time	Initial value:10.0s，Range:0.0~999.9s （s）
5. Auxiliary Pulse 2 Execute Time	Total execution time of auxiliary pulse 2. If it's 0, it loops forever，Initial Value 0，range 0.0~999.9s（s）
6. Auxiliary Pulse 2 ON Time	**Initial value:10.0s，Range:0.0~999.9s**（s）
7. Auxiliary Pulse 2 OFF Time	**Initial value:10.0s，Range:0.0~999.9s**（s）
8. Auxiliary Pulse 3 Execute Time	Total execution time of auxiliary pulse 3. If it's 0, it loops forever，Initial Value 0，range 0.0~999.9min（**min**）
9. Auxiliary Pulse 3 ON Time	**Initial value:10.0s，Range:0.0~999.9s**（**min**）

10. Auxiliary Pulse 2 OFF Time	**Initial value:10.0s， Range:0.0~999.9s（min）**
11. Auxiliary Pulse 4 Execute Time	Total execution time of auxiliary pulse 4. If it's 0, it loops forever， Initial Value 0， range 0.0~999.9min（**min**）
12. Auxiliary Pulse 4 ON Time	**Initial value:10.0 min， Range:0.0~999.9min（min）**
13. Auxiliary Pulse 4 OFF Time	**Initial value:10.0 min， Range:0.0~999.9min（min）**
Overtime Alarm	
1.Fill&DICS Monitor ON/OFF	Fill, DICS overtime ON/OFF When turn on, starts judging, initial value: OFF
2.A:Co-Fill Overtime	Initial value 5.0,Range 0.0~99.9 （s）
3.A:Me-Fill Overtime	Initial value 5.0,Range 0.0~99.9 （s）
4.A:Fi-Fill Overtime	Initial value 5.0,Range 0.0~99.9 （s）
5.A: DISC Overtime	Initial value 5.0,Range 0.0~99.9 （s）
6.B:Co-Fill Overtime	Initial value 5.0,Range 0.0~99.9 （s）
7.B:Me-Fill Overtime	Initial value 5.0,Range 0.0~99.9 （s）
8.B:Fi-Fill Overtime	Initial value 5.0,Range 0.0~99.9 （s）
9.B: DISC Overtime	Initial value 5.0,Range 0.0~99.9 （s）
10. Fill Timeout Handle	Initial value： Alarm And Finish Fill, Range:**0~2;** **0:Only Alarm** .The alarm persists and needs to be manually cleared **1:Alarm And Stop.** The instrument automatically enters a stop state and outputs a feeding timeout alarm. Continuous output requires manual release of the alarm. **2:Alarm And Finish Fill .**End feeding and start unloading. When the feeding time exceeds the set feeding timeout, regardless of whether it is currently in fast or slow feeding, the instrument outputs a feeding timeout alarm and automatically ends feeding to enter the subsequent process.
11. Fill Timeout Lower Limit	Initial value： **0**, Range:**0~** full capacity; After the filling starts, if the current weight is lower than this value after the feeding timeout, the feeding timeout processing will not be executed, and the fast feeding state will continue to be maintained; Otherwise, the feeding timeout will be processed. (If set to 0, the feeding timeout processing will not be executed directly)
12. Disc Timeout Handle	Initial value： Alarm And Finish Disc, Range:**0~2;** 0: **Only Alarm** . The alarm persists and needs to be manually cleared 1: **Alarm And Stop.** When the unloading time exceeds the set unloading timeout, the instrument automatically enters a stop state and outputs an unloading timeout alarm. The alarm

	persists and needs to be manually cleared 2: **Alarm And Finish Disc.** End unloading and start feeding. When the unloading exceeds the limit, the instrument outputs an unloading timeout alarm and automatically ends unloading and enters the next scal

4.6 Motor Parameter

System maintenance parameters scale “Fill Gate Driver",” Clamper mode" and " DISC mode" are set to the motor, the following parameters can be seen.

◆ Right side is motor group, can swift

Parameter		Description
Filler		
1. Gate Driver		0:Air Drived, 1: Step Motor, 2: Motor mode. (Note: Select the corresponding feeding motor mode and set the corresponding parameters)
2. Gate Pos. Signal		ON:If Closed Positive logic (If input is valid, gate closed ready.). OFF: If Closed(If input is invalid, gate closed ready).
3. Motor Linker		Set recipt ID relate to Motor ID
4. Close Overtime		Default value: 4.0, range: 0.0~99.9.（**s**）
5.Step Motor Config(Scale A Filler/Scale B Filler)	a. Filler Motor Freq	Filling motor frequency Default value: 12000, range: 1~50000.（**Hz**）
	b. Power-On Go 0 Pos. Freq	Power-On Go, Feeding motor returns to the origin at this frequency. Initial value：**2000**； range：**1~50000**（**Hz**）
	c. Motor Steps(Fi-F)	Fine Flow pulse quantity .Default value: 1800, range: 1 ~ 60000.
	d. Motor Steps(Me-F)	Medium Flow pulse quantity .Default value: 4300, range: 1 ~ 60000.
	e. Motor Steps(Co-F)	Coarse Flow pulse quantity .Default value: 7750, range: 1~60000.
	f.Fi-F,Me-F, Co-F Test Button	Test shortcut key, check the opening status of the controller, and is beneficial to quickly adjust the pulse number
	g. Start Freq	A Motor Start Freq Default value：2000，range：1~50000 （Hz） （this value can’t bigger than A Motor Start Freq）
	h. ACC Time	A Motor ACC Time Default value：**100**，range：**0~9999** （**ms**）
	i. DEC Time	A Motor DEC Time. Default value：**50**，range：**0~9999**（**ms**）
	j. Filler Gate DIR Type	Filler Gate DIR Type **OFF:Gate Open Direction:**when the feeding door is opened, the rotation direction signal output of the feeding stepper motor is invalid, and the direction signal output is effective when the closing action is closed **ON:Gate Open Direction:**when the feeding door is

		opened, the rotation direction signal output of the feeding stepper motor is effective, and the direction signal output is invalid when the closing action is closed
	k.Motor Steps For Closed	The addition of materials in the scale structure does not require the signal switch to be turned on. The closing of the door requires multiple pulses. Default value：**100**，range：**1-60000**
6. Motor Config(Scale A/Scale B Filler)	a. Fi-Fill Gate Open Time	Fi-Fill Gate Open Time .Default value：**0.2,** range：**0~99.99** （**s**）
	b. Me-Fill Gate Open Time	Me-Fill Gate Open Time.Default value：**0.4,** range：**0~99.99** （**s**）
	c. Co-Fill Gate Open Time	Co-Fill Gate Open Time.Default value：**0.8,** range：**0~99.99** （**s**）
	d. Fi-F, Me-F, Co-F Test Button	Test shortcut key, check the opening status of the controller, and is beneficial to quickly adjust the pulse number
Clamper		
1. Driver		Air Drived,Step Motor,Normal Motor(Two Pos.Signal), Normal Motor(One Pos.Signal) (Note: Select the corresponding bag clamping mode and set the corresponding parameters)
2. Pos. Signal		Clamper Pos. Signal Type . ON:If Closed: Is ON, The Filler Gate Closed Firmly OFF:If Closed:Is OFF, The Filler Gate Closed Firmly
3. Close Overtime		Default value：**3.0**， range：**0.0~99.9** （**s**） It can be set in both motor two Pos. signal and one Pos. signal modes.
4. Open Overtime		Default value：**3.0**， range：**0.0~99.9** （**s**） It can be set in both step motor and two Pos. signal modes.
5.Step Motor Config (A:Clamper/B: Clamper)	a. Clamper Lock Freq	Default value：**30000**，range：**1~50000** （**Hz**）
	b. Clamper Unlock Freq	Default value：**20000**，range：**1~50000** （**Hz**）
	c. Motor Steps(Bag Lock)	Number of pulse clips in the clamper . Default value：**12000**，range：1~**60000**
	d. Power-On Go 0 Pos. Freq	Power-On Go, Feeding motor returns to the origin at this frequency. Initial value：2000； range：1~50000（Hz）
	e. Start Freq	Default value：**2000,** range：1~**50000** （**Hz**）（this value can't bigger than A Motor Start Freq）
	f. ACC Time	Default value：200， range：0.0~9999（ms）
	g. DEC Time	Default value：**50**，range：**0.0~9999**（**ms**）

	h.Clamper DIR Signal Type	Motor direction signal state when bag clamping action of bag clamp **ON:If Clamper Open Direction:** When the bag is clamped by the bag loosening mechanism, the rotation direction signal output of the stepper motor of the bag loosening mechanism is invalid, while the direction signal output is effective when the bag is clamped **OFF:If Clamper Open Direction:**: When the bag is clamped by the bag loosening mechanism, the rotation direction signal output of the stepper motor for the bag loosening mechanism is effective, but the direction signal output is invalid when the bag is loosening
	i. A:Clamper/ B:Clamper Test Button	Shortcut key for clamping clamper bag, which is used to detect the condition of clamping loose bag equipment
	j.Steps For Clamper Open	Loose bag does not require a signal switch to open, execute multiple pulse counts to close the loose bag. Default value：**100**，range：**1-60000**
6. Two Pos. Signal parameters (A:Clamper/B: Clamper)	**a.** A:Clamper/ B:Clamper Test Button	Shortcut key for clamping clamper bag, which is used to detect the condition of clamping loose bag equipment
7. One Pos. Signal parameters (A:Clamper/B: Clamper)	a.Clamper Open Time	The effective time of loosening the bag for ordinary motors. Default value：**0.5**，range：**0~99.99**（**s**）
	b. A:Clamper/ B:Clamper Test Button	Shortcut key for clamping clamper bag, which is used to detect the condition of clamping loose bag equipment
DISC Parameters（Applicable in Net Weigher and bulk modes）		
1. Gate Driver		Air Drived,Step Motor,Normal Motor(One Pos.Signal), Normal Motor(Two Pos.Signal),Normal Motor Rotating (Note: Select the corresponding discharge motor mode and set the corresponding parameters)
2. Close Overtime		Default value：**3.0** range：**0.0~99.9**（**s**）
3. Gate Pos. Signal		**ON:If Cloased:**Is OFF, The Filler Gate Closed Firmly **OFF:If Cloased:**Is OFF, The Filler Gate Closed Firmly
4. DISC Gate Pos. Detect		Set to "off", the controller does not need to detect the unloading signal in place all the time, but only needs to detect once when starting filling in each operation. Once the limit signal is detected, there is no need to detect the limit signal again. Set to "on", real-time detection of discharge motor is in the limit, if not the limit, shielding feeding output, and alarm prompt, until the limit is detected before resuming filling.
5. Step Motor Config	a.DISC Gate Open Freq	Default value：**30000**，range：**1~50000** （Hz）

(A:DISC/ B:DISC)	b. DISC Gate Close Freq	Default value：**20000**，range：**1~50000** （**Hz**）
	c.Motor Steps （DISC）	Number of discharge door pulses.Default value：**12000**，range：**1~60000**
	d. Power-On Go 0 Pos. Freq	Power-On Go, Feeding motor returns to the origin at this frequency. Initial value：2000； range：**1~50000**（**Hz**）
	e. Start Freq	Default value：**2000** range：**1~50000** （**Hz**）（this value can't bigger than A Motor Start Freq）
	f. ACC Time	Default value：**200**， range：**0~9999** （**ms**）
	g. DEC Time	Default value：**50**，range：**0~9999**（**ms**）
	h. DISC Gate DIR Signal Type	Discharging motor from close the door to open the motor direction signal state **OFF:If DISC Gate Open Direction:** when unloading mechanism opens the door, the rotation direction signal output of unloading stepper motor is invalid, and the direction signal output is effective when closing the door **ON:If DISC Gate Open Direction:**: when unloading mechanism opens the door, the output of rotation direction signal of unloading stepper motor is effective, and the output of direction signal is invalid when closing the door
	i.A:DISC /B:DISC Test Button	A:DISC /B:DISC Test shortcut key
6. Normal Motor(One Pos. Signal) DISC Config （A:DISC/B:DISC）	**a.**DISC Open Time	A/ B DISC motor door opened signal output timer Default value：1.00， range：0.00~99.99（s）
	b.A:DISC /B:DISC Test Button	A:DISC /B:DISC Test shortcut key
7. Normal Motor (Two Pos. Signal) DISC Config （A:DISC/B:DISC）	a.Open Overtime	Default value：**3.0**，range：**0.0~99.9** （s）
	b.A:DISC /B:DISC Test Button	A:DISC /B:DISC Test shortcut key
8. Normal Motor Rotating DISC Config （A:DISC/B:DISC）	**a.**DISC Open Time	A/ B DISC motor door opened signal output timer Default value：1.00， range：0.00~99.99（s）
	b.A:DISC /B:DISC Test Button	A:DISC /B:DISC Test shortcut key

4.7 Statistic

In the main interface, click【**Statistic**】 to enter the interface.Under the "Statistic " parameter, the user can view the total accumulation/batch, recipe accumulation, user accumulation, history record and carry out clearing, printing and other operations.

- Under【Total ACUM/ Batch】interface，user can view the total accumulated value , batch times， stock ACUM,permanent CUM and set the stock total. If the serial port is set to print, click【Data Edit】 to print the total ACUM, export the total ACUM

by U-disk，clear the total ACUM and the batch information.

- In【total ACUM and Batch】 interface can set batch in net weigher /gross weigher mode and set the stock total in bulk mode.After finish set batch number and the stock total controller in the main interface prompts "Batch Completed" alarm or Delivery and receipt completed " alarm, wait for the user processing, when the "alarm" input signal valid, or press "clear alarm", controllerwill clear the alarm, or enter stop back to stop state also can clear alarm.(Note：if the total quantity of delivery set to 0, it is the receiving mode ,otherwise it's shipping mode)
- Under 【Recipe ACUM】, check all receipt ID's ACUM PCS and ACUM weight, press interface right side to swift recipt No. **1-8、9-16、17-24、25-32、33-40,** press【Data Edit】to clear all recipe ACUM, print all recipe ACUM, print present recipe ACUM ,choose receipt print and export recipe ACUM data by U-disk.
- Under【Recipe ACUM】interface, click on the cumulative recipe you want to delete to delete the cumulative content of the selected recipe.
- Under 【User ACUM】interface, to check all users' ACUM PCS and weight, press【Data Edit】to clear all users'ACUM data , print all users' ACUM, print present users' ACUM, choose user to print and export user ACUM data by U-disk etc.
- Under【User ACUM】interface, cick on the user to be deleted to delete the cumulative content of the selected user.
- Under 【History Data】interface, can refer history record, click【Data Edit】can export history record by U-disk, can delete history data.

4.8 I/O Module

GM9907-LD has equipped with 12 input ports and 16 output ports if with expansion board to connect with other devices. Click 【IO test】,Check whether the output and input interfaces of the controller are normally connected with external devices.

The initialization definition of I/O as following,（Output ports **1-16** matches with OUT1~OUT16，Input ports 1-12 matches with IN1~IN12）. Particularly，OUT12, OUT13, OUT14, OUT15, OUT16 is motor control output.

Net Weigher mode:

Output		Input	
OUT01	Running	IN01	Start
OUT02	Stopped	IN02	E-Stop(Emergency stop)
OUT03	A:Co-Fill(Scale A Coarse Flow)	IN03	A :ZERO
OUT04	A:Me-Fill(Scale A Medium Flow)	IN04	B :ZERO
OUT05	A:Fi-Fill(Scale A Fine Flow)	IN05	A: Manual DISC
OUT06	B:Co-Fill(Scale B Coarse Flow)	IN06	B: Manual DISC
OUT07	B:Me-Fill(Scale B Medium Flow)	IN07	Bag :Lock/Unlock Request
OUT08	B:Fi-Fill(Scale B Fine Flow)	IN08	Clear Alarm
OUT09	A :Result Waiting	IN09	A: Manual Fi-F (Scale A manual Fine Flow)
OUT10	B:Result Waiting	IN10	B: Manual Fi-F (Scale B manual Fine Flow)
OUT11	A: DISC	IN11	Change Recipe
OUT12(PWM)	B: DISC	IN12	Stop
OUT13(PWM)	A: Lock Bag		
OUT14(PWM)	A: Patting		
OUT15(PWM)	Alarm		
OUT16(PWM)	Over		

Gross Weigher mode:

Output		Input	
OUT01	Running	IN1	Start
OUT02	Stopped	IN2	E-Stop(Emergency stop)
OUT03	A:Co-Fill(Scale A Coarse Flow)	IN3	Stop
OUT04	A:Me-Fill(Scale A Medium Flow)	IN4	A :ZERO
OUT05	A:Fi-Fill(Scale A Fine Flow)	IN5	B :ZERO
OUT06	B:Co-Fill(Scale B Coarse Flow)	IN6	Bag :Lock/Unlock Request
OUT07	B:Me-Fill(Scale B Medium Flow)	IN7	B:Bag :Lock/Unlock Request
OUT08	B:Fi-Fill(Scale B Fine Flow)	IN8	A: Manual Fill（LS）
OUT09	A :Result Waiting	IN9	B: Manual Fill（LS）
OUT10	B:Result Waiting	IN10	A: Manual Fi-F (Scale A manual Fine Flow)
OUT11	A: Lock Bag	IN11	B: Manual Fi-F (Scale B manual Fine Flow)
OUT12(PWM)	B: Lock Bag	IN12	Clear alarm
OUT13(PWM)	A:Patting Bag		
OUT14(PWM)	B: Patting Bag		
OUT15(PWM)	Alarm		
OUT16(PWM)	Over		

Bulk scale mode:

Output		Input	
OUT01	Running	IN1	Start
OUT02	Stopped	IN2	E-Stop(Emergency stop)
OUT03	A:Co-Fill(Scale A Coarse Flow)	IN3	Stop
OUT04	A:Me-Fill(Scale A Medium Flow)	IN4	A :ZERO
OUT05	A:Fi-Fill(Scale A Fine Flow)	IN5	B :ZERO
OUT06	B:Co-Fill(Scale B Coarse Flow)	IN6	A: Manual DISC
OUT07	B:Me-Fill(Scale B Medium Flow)	IN7	B: Manual DISC
OUT08	B:Fi-Fill(Scale B Fine Flow)	IN8	A: Manual Fill（LS）
OUT09	A :Result Waiting	IN9	B: Manual Fill（LS）
OUT10	B:Result Waiting	IN10	A: Manual Fi-F (Scale A manual Fine Flow)
OUT11	A: DISC	IN11	B: Manual Fi-F (Scale B manual Fine Flow)
OUT12(PWM)	B: DISC	IN12	Clear alarm
OUT13(PWM)	Batch Completed		
OUT14(PWM)	Over/Under		
OUT15(PWM)	Last Feed		
OUT16(PWM)	Alarm		

4.8.1 Output port & input port definition

The output port and the input port can be defined according to the application content.

Modify the definition of input and output I/O module paracontrollers through the menu interface I/O module paracontrollers. Each I/O module corresponds to a code, as follows:

I/O module description

Output		
Code	**Content**	**Explanation**
O0	None	Undefined if output port is O0.
O1	Running	The output signal is defined valid in run status.
O2	Stopped	The output signal is defined valid in stop status.
O3	A:Co-Fill	To control large discharge opening of scale A filling system. If present weight value<target value –scale A Coarse Flow leading quantity in filling process, output signal is effective.
O4	A:Me-Fill	To control medium discharge opening of scale A filling system. If present weight value<target value –scale A Medium Flow leading quantity in filling process, output signal is effective.
O5	A:Fi-Fill	To control slow discharge opening of scale A filling system. If present weight value<target value –scale A Fine Flow leading quantity in filling process, output signal is effective.
O6	B:Co-Fill	To control large discharge opening of scale B filling system. If present weight value<target value –scale B Coarse Flow leading quantity in filling process, output signal is effective.
O7	B:Me-Fill	To control medium discharge opening of scale B filling system. If present weight value<target value –scale B Medium Flow leading quantity in filling process, output signal is effective.
O8	B:Fi-Fill	To control slow discharge opening of scale B filling system. If present weight value<target value –scale B Fine Flow leading quantity in filling process, output signal is effective.
O9	A: Lock Bag	To control bag locked. Effective signal: bag locked. Ineffective signal: bag unlocked.
O10	A:Result Waiting	Used to indicate scale A filling completed. During Fine Flow complete and material discharge (with hopper mode) or before pat bag (no hopper), output signal is effective.
O11	A: DISC	To control hopper discharge gate. Output signal is effective when start discharging material from hopper A to bag.
O12	B: Lock Bag	To control bag locked system. Effective signal: bag locked. Ineffective signal: bag unlocked. Only effective in no hopper mode.
O13	A:Result Waiting	Used to indicate scale B filling completed. During Fine Flow complete and material discharge (with hopper mode) or before pat bag (no hopper), output signal is effective.
O14	B: DISC	To control hopper discharge gate. Output signal is effective when start discharging material from hopper B to bag.
O15	A:Patting Bag	Used to control pat bag machine. The pulse width and times are controllable.
O16	B: Patting Bag	Used to control pat bag machine. The pulse width and times are controllable. (Only for no hopper mode.)
O17	A:Cutting Gate Open	Output is effective only during scale A filling period.
O18	B:Cutting Gate Open	Output is effective only during scale B filling period.
O19	FILL Supplement	To control the filling system. When the low material level input defined invalid, the output is effective. When the upper material level defined valid, the output is ineffective.

O20	Supplement Empty	When the low material level input defined invalid, the output is effective. When the upper material level defined valid, the output is ineffective.
O21	A:NearZero	Output port defined effective if scale A current weight is smaller than near-zero value.
O22	B:NearZero	Output port defined effective if scale B current weight is smaller than near-zero value.
O23	Alarm	Output port defined effective if Over/Under or batch times are over.
O24	Batch Completed	Output port defined effective if batch completed.
O25	Over	Signal is effective when over.
O26	Under	Signal is effective when under.
O27	Over/Under	Signal is effective when over or under.
O28	Conveyor Start	To control conveyor starts and stop in gross weigher mode. Effective signal: start. Ineffective signal: stop.
O29	Coding / A Coding	Output this signal when coding delay over and bag locked output is effective.
O30	B Coding	Output this signal when coding delay over and bag locked output is effective. Only for no hopper mode.
O31	A:Filler Gate PWM	When the filling mode is set to a stepping motor controlled fill gate ON/OFF, the output signal is a pulse signal fed to the scale A stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT12~OUT16**
O32	A:Filler Gate DIR	When the filling mode is set to a stepping motor controlled fill gate ON/OFF, the output signal is a direction signal fed to the scale A stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT1~OUT11.**
O33	B:Filler Gate PWM	When the filling mode is set to a stepping motor controlled fill gate ON/OFF, the output signal is a pulse signal fed to the scale B stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT12~OUT16.**
O34	B:Filler Gate DIR	When the filling mode is set to a stepping motor controlled fill gate ON/OFF, the output signal is a direction signal fed to the scale B stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT1~OUT11.**
O35	A:Clamper PWM	When the bag lock mode is set to a stepping motor controlled bag locked or bag unlocked, the output signal is a pulse signal fed to the scale A stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT12~OUT16.**
O36	A: Clamper DIR	When the bag lock mode is set to a stepping motor controlled bag locked or bag unlocked, the output signal is a direction signal fed to the scale A stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT1~OUT11.**
O37	B:Clamper PWM	When the bag lock mode is set to a stepping motor controlled bag locked or bag unlocked, the output signal is a pulse signal fed to the scale B stepper motor driver to control the motor rotation. **(Only for no hopper mode)** **Note: This function can only be defined on one of the port to OUT12~OUT16.**
O38	B: Clamper DIR	When the bag lock mode is set to a stepping motor controlled bag locked or bag unlocked, the output signal is a direction signal fed to the scale B stepper motor driver to control the motor rotation. **(Only for no hopper mode)** **Note: This function can only be defined on one of the port to OUT1~OUT11.**
O39	A:DISC Gate PWM	When the discharge mode is set to a stepping motor controlled discharging, the output signal is a pulse signal fed to the scale A stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT12~OUT16.**

O40	A:DISC Gate DIR	When the discharge mode is set to a stepping motor controlled discharging, the output signal is a pulse signal fed to the scale A stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT1~OUT11.**
O41	B:DISC Gate PWM	When the discharge mode is set to a stepping motor controlled discharging, the output signal is a pulse signal fed to the scale B stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT12~OUT16.**
O42	B:DISC Gate DIR	When the discharge mode is set to a stepping motor controlled discharging, the output signal is a pulse signal fed to the scale B stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT1~OUT11.**
O43	A:Filler Gate Open	When the filling mode is set normal filling motor controlled the discharge gate, used to control large discharge gate opening of scale A. This signal is valid in filling process and the valid time can be set in the motor parameters.
O44	B:Filler Gate Open	When the filling mode is set normal filling motor controlled the discharge gate, it used to control large discharge gate opening of scale B. This signal is valid in filling process and the valid time can be set in the motor parameters.
O45	A:Filler Gate Close	When the filling mode is set normal filling motor controlled the discharge gate used to control large discharge gate opening of scale A. This signal is valid in the end of Coarse/Medium/Fine Flow until filling limit is effective and the valid time can be set in the motor parameters.
O46	B:Filler Gate Close	When the filling mode is set normal filling motor controlled the discharge gate used to control large discharge gate opening of scale B. This signal is valid in the end of Coarse/Medium/Fine Flow until filling limit is effective and the valid time can be set in the motor parameters.
O47	A:Bag Unlock	When bag locked mode is set normal motor control bag locked/unlocked. Effective signal: bag unlocked. Ineffective signal: bag locked.
O48	B:Bag Unlock	When bag locked mode is set normal motor control bag locked/unlocked. Effective signal: bag unlocked. Ineffective signal: bag locked.
O49	A:DISC Gate Close	When the discharge mode is set to discharge with a common motor reversing controlling so as to control scale A discharge gate closing. Effective signal: discharge gate closed after discharging. Ineffective signal: stop closing.
O50	B: DISC Gate Close	When the discharge mode is set to discharge with a common motor reversing controlling so as to control scale B discharge gate closing. Effective signal: discharge gate closed after discharging. Ineffective signal: stop closing.
O51	Sewing	Sewing input valid, after the start delay of sewing ends, sewing output is valid.
O52	String Cut	Sewing output valid time ends, this output is valid, The valid time is the output valid time of the cutter
O53	Aux. pulse O1	Auxiliary pulse 1 input valid, output pulse signal（valid time is auxiliary pulse 1 valid time，invalid time is auxiliary pulse 1 invalid time）,stop output when the total execution time is up （If the total execution time is set to 0, the pulse output is always pressed）.
O54	Aux. pulse O2	Auxiliary pulse 2 input valid, output pulse signal（valid time is auxiliary pulse 2 valid time，invalid time is auxiliary pulse 2 invalid time）,stop output when the total execution time is up （If the total execution time is set to 0, the pulse output is always pressed）.
O55	Aux. pulse O3	Auxiliary pulse 3 input valid, output pulse signal（valid time is auxiliary pulse 3 valid time，invalid time is auxiliary pulse 3 invalid time）,stop output when the total execution time is up （If the total execution time is set to 0, the pulse output is always pressed）.
O56	Aux. pulse O4	Auxiliary pulse 4 input valid, output pulse signal（valid time is auxiliary pulse 4 valid time，invalid time is auxiliary pulse 4 invalid time）,stop output when the total execution time is up （If the total execution time is set to 0, the pulse output is always pressed）.

O57	A:DISC Shaking	It is used in the function of discharging patting. Under the running state, the function of starting patting under the condition of incomplete discharge can discharge the material completely.
O58	B:DISC Shaking	It is used in the function of discharging patting. Under the running state, the function of starting patting under the condition of incomplete discharge can discharge the material completely.
O59	User Logic O1	The output signal of the auxiliary lofic output 1
O60	User Logic O2	The output signal of the Auxiliary lofic output 2
O61	User Logic O3	The output signal of the Auxiliary lofic output 3
O62	User Logic O4	The output signal of the Auxiliary lofic output 4
O63	User Logic O5	The output signal of the Auxiliary lofic output 5
O64	User Logic O6	The output signal of the Auxiliary lofic output 6
O65	A:Hanger Up/Down	Metering Hanger Up/Down A output
O66	B: Hanger Up/Down	Metering Hanger Up/Down B output
O67	Over /Under	When A exceeds or underranges, the output signal is defined as valid.
O68	B:Over /Under	When B exceeds or underranges, the output signal is defined as valid.
O69	Last Feed	When the signal is valid, the current is the last feed.
O70	Tractor Output	Connect the peripheral tractor.
O71	A:Weight OK	After the calibration of scale A is completed, this signal is valid, but it is invalid during unloading
O72	B:Weight OK	After the calibration of scale B is completed, this signal is valid, but it is invalid during unloading
O73	DISC State	Both scales A and B are effective when unloading from the machine. When any one of the 6 scales under the host is weighed properly, it is valid
O74	Allow Slave1 DISC	Dedicated for unloading interlock host, controlling the allowable unloading of slave machine 1
O75	Allow Slave2 DISC	Dedicated for unloading interlock host, controlling the allowable unloading of slave machine 2
O76	DISC Request	Both scales A and B are effective when unloading from the machine. When any one of the 6 scales under the host is weighed properly, it is valid
O77	Lifting Hook	Used to control the bag lifting mechanism, this signal effectively achieves bag lifting; If the signal is invalid, release the hook. (The lifting bag cannot be loosened during the feeding process. The lifting bag can only be loosened after the pre feeding and weighing processes are completed. If the lifting bag is not defined, the lifting bag signal will not be judged.)
O78	Conveyor 2	Control conveyor 2 to output effectively.
O79	Conveyor 3	Control conveyor 3 to output effectively.
O80	Conveyor 1 Reverse Run	Control conveyor 1 to reverse output effectively.
O81	Blowing	Used to control the operation of the blowing device.
O82	Return Valve	Used to control the operation of the return valve, this signal is valid when the blowing is completed.

O83	Multifunction Hanger	Used for integrated control bracket and bag. When not performing bag tapping: This switch value is the same as the upward (O65) state of the A measuring bracket. When executing bag tapping: This switch is opposite to the status of bag tapping A (O15). The effective bracket for the bag is invalid, and the bracket for the bag is invalid.
O84	DISC Completed	After the unloading delay of the bucket scale ends, it will output a signal for a period of time, indicating that the unloading is completed.
O85	OUT1 Direct Control	Control switch output 1 through serial port
O86	OUT2 Direct Control	Control switch output 2 through serial port
O87	OUT3 Direct Control	Control switch output 3 through serial port
O88	OUT4 Direct Control	Control switch output 4 through serial port
O89	OUT5 Direct Control	Control switch output 5 through serial port
Input		
I0	None	Undefined if input port is 00
I1	Start(PS)	This signal is valid in running status. (Pulse input signal)
I2	E-Stop(PS)	Return to stop state if signal is valid. (Pulse input signal)
I3	Stop(PS)	Finish current package and then return to stop status. (Pulse input signal)
I4	A :ZERO	Clear zero of scale A if signal is effective. (Pulse input signal)
I5	B :ZERO	Clear zero of scale B if signal is effective. (Pulse input signal)
I6	Bag Lock/Unlock Request	To control bag locked/unlocked. Bag locked when first input this signal; bag unlocked if input the signal again.
I7	B:Bag Lock/Unlock Request	To control bag locked/unlocked. Scale B bag locked when first input this signal; scale B bag unlocked if input the signal again. Only for no hopper.
I8	Clear Total ACUM	To clear accumulated weight and times. Accumulated recipes and users total are cleared at the same time.
I9	A :Manual DISC(PS)	Used to manually clear the material in the hopper. Scale A discharge output is valid when input signal is valid, but invalid if again.
I10	B :Manual DISC(PS)	Used to manually clear the material in the hopper. Scale B discharge output is valid when input signal is valid, but invalid if again.
I11	A :Manual Fi-F(PS)	Scale A slow output is valid when first input this signal, invalid if input again.
I12	B :Manual Fi-F (PS)	Scale B slow output is valid when first input this signal, invalid if input again.
I13	A:Manual Fill (PS)	Combination filling mode: Scale A Coarse /Medium /Fine Flow output is valid when first time input the signal. Invalid if input again. Solo filling mode: Scale A Coarse Flow output is valid when first time input the signal. Invalid if input again.
I14	B :Manual Fill (PS)	Combination filling mode: Scale B Coarse /Medium /Fine Flow output is valid when first time input the signal. Invalid if input again. Solo filling mode: Scale B Coarse Flow output is valid when first time input the signal. Invalid if input again.
I15	Change Recipe	Only valid once. Recipe changes to next one which target value is not zero.
I16	Clear Alarm	Clear alarm output. (Pulse input signal)
I17	Suplement Full	To connect upper level of the hopper. (Level input)

I18	Suplement NotEmpty	To connect under level of the hopper. (Level input) Lack materials if invalid.Unlack materials if valid.
I19	Start/E-Stop(LS)	Enter running status if signal is valid, return to stop status if invalid. This is level signal.
I20	Start/Stop(LS)	Enter running status if signal is valid, return to stop status if invalid. This is level signal.
I21	A :Manual DISC(LS)	Manually clear the materials in the hopper. Scale A discharge output is valid if input is effective.
I22	B :Manual DISC(LS)	Manually clear the materials in the hopper. Scale B discharge output is valid if input is effective.
I23	Bag Locked	If the input is defined, valid means ready, invalid means not ready. With hopper mode: If bag locked in the running process, the controller will begin to discharge when bag locked ready. In discharge process, will not check the effectivity of signal. No hopper mode: If bag locked in the running process, the controller will begin to fill when bag locked ready. In filling process, will not check the effectivity of signal. This is level input.
I24	B:Bag Locked	If input signal is valid, means bag locked ready and invalid means bag locked not ready. No hopper mode: The controller starts to fill once detect bag locked ready is valid. In filling process, will not check the effectivity of signal. This is level input.
I25	A : DISC Gate Closed Pos.	If the signal is valid, means scale A gate closed ready. If discharge real time detection set ON and detect invalid sigal, will shield filling output and alarm, the output controller light will be off. If detect valid signal and have to fill, it will clear alarm automatically and continue to fill. If discharge real time detection set OFF and discharge gate closed not ready, it will alarm. Once detect valid signal, starting to fill.
I26	B : DISC Gate Closed Pos.	If the signal is valid, means scale B gate closed ready. If discharge real time detection set ON and detect invalid sigal, will shield filling output and alarm, the output controller light will be off. If detect valid signal and have to fill, it will clear alarm automatically and continue to fill. If discharge real time detection set OFF and discharge gate closed not ready, it will alarm. Once detect valid signal, starting to fill.
I27	A :Manual Fi-F(LS)	Effective signal: Scale A manual Fine Flow output is valid. Ineffective signal: Scale A manual Fine Flow output is invalid.
I28	B :Manual Fi-F (LS)	Effective signal: Scale B manual Fine Flow output is valid. Ineffective signal: Scale B manual Fine Flow output is invalid.
I29	A :Manual Fill (LS)	Combination filling mode: Scale A Coarse/Medium/Fine Flow output are valid if effective input. Solo filling mode: Scale A Coarse Flow output is valid if effective input.
I30	B:Manual Fill (LS)	Combination filling mode: Scale B Coarse/Medium/Fine Flow output are valid if effective input. Solo filling mode: Scale B Coarse Flow output is valid if effective input.
I31	A:Filler Gate Closed Pos.	When stepping motor controls filling gate ON/OFF, it is limit digit input signal for scale A filling gate closed ready. When normal motor controls filling gate ON/OFF, it is limit digit input signal for scale A filling gate closed ready. (Note: this signal is determined by the digit signal type. Positive logic: The filling gate is closed if signal is valid. Negative logic: The filling gate is closed if signal is invalid.
I32	B:Filler Gate Closed Pos.	When stepping motor controls filling gate ON/OFF, it is limit digit input signal for scale B filling gate closed ready. When normal motor controls filling gate ON/OFF, it is limit digit input signal for scale B filling gate closed ready.

		(Note: this signal is determined by the digit signal type. Positive logic: The filling gate is closed if signal is valid. Negative logic: The filling gate is closed if signal is invalid.)
I33	A:Bag Released	It is a limit input signal of bag unlocked ready when stepping motor and motor double limit digit controlling bag locked/unlocked. (Note: this signal is determined by the digit signal type. Positive logic: Bag unlocked ready if signal is valid. Negative logic: Bag unlocked ready if signal is invalid.)
I34	B:Bag Released	It is a limit input signal of bag unlocked ready when stepping motor and motor double limit digit controlling bag locked/unlocked. (Note: this signal is determined by the digit signal type. Positive logic: Bag unlocked ready if signal is valid. Negative logic: Bag unlocked ready if signal is invalid.)
I35	A:DISC Gate Closed Pos.	When material discharged is controlled by normal motor reversible double limit, it is a signal of discharge gate opening ready and discharge gate opend.
I36	B: DISC Gate Closed Pos.	When material discharged is controlled by normal motor reversible double limit, it is a signal of discharge gate opening ready and discharge gate opend.
I37	Sewing Start(LS)	When this I/O Module input is valid, start sewing valid output (pulse signal).
I38	Sewing E-Stop t(LS)	When this I/O Module input is valid, sewing stop output (level signal).
I39	Aux. pulse 1 Ctrl	The input is valid, the auxiliary pulse 1 output is valid, the second input is valid, and the auxiliary pulse 1 output is invalid
I40	Aux. pulse 2 Ctrl	The input is valid, the auxiliary pulse 2 output is valid, the second input is valid, and the auxiliary pulse 2 output is invalid
I41	Aux. pulse 3 Ctrl	The input is valid, the auxiliary pulse 3 output is valid, the second input is valid, and the auxiliary pulse 3 output is invalid
I42	Aux. pulse 4 Ctrl	The input is valid, the auxiliary pulse 4 output is valid, the second input is valid, and the auxiliary pulse 4 output is invalid
I43	User Logic 1 Trigger	Custom trigger input signal for auxiliary logic 1.
I44	User Logic 2 Trigger	Custom trigger input signal for auxiliary logic 2.
I45	User Logic 3 Trigger	Custom trigger input signal for auxiliary logic 3.
I46	User Logic 4 Trigger	Custom trigger input signal for auxiliary logic 4.
I47	User Logic 5 Trigger	Custom trigger input signal for auxiliary logic 5.
I48	User Logic 6 Trigger	Custom trigger input signal for auxiliary logic 6.
I49	Fill Permissoin (LS)	Filling allowed input: if filling allowed input is defined in the I/O Module, judge whether filling allowed input is effective before filling flow. If it is effective, the filling flow will be started. If it is not, wait.
I50	DISC Permissoin (LS)	DISC allow input is only for with hopper mode, if Disc allowed input is defined in the I/O Module, judge whether Disc allowed input is effective after waiting. If it is effective, the Disc flow will be started. If it is not, wait.
I51	B:Fill Permissoin (LS)	Filling allowed input: if B filling allowed input is defined in the I/O Module, judge whether B filling allowed input is effective before filling flow. If it is effective, the filling flow will be started. If it is not, wait.

I52	B:DISC Permissoin (LS)	DISC allow input is only for with hopper mode, if B Disc allowed input is defined in the I/O Module, judge whether B Disc allowed input is effective after waiting. If it is effective, the Disc flow will be started. If it is not, wait.
I53	**A:**Manual Hanger Ctrl	When this input is valid, **A** Metering hanger upward is valid
I54	**B:** Manual Hanger Ctrl	When this input is valid, **B** Metering hanger upward is valid
I55	Slave 1 DISC Request	Unloading interlock host specific, used to obtain unloading requests from slave 1.
I56	Slave 2 DISC Request	Unloading interlock host specific, used to obtain unloading requests from slave 2.
I57	Slave DISC State	Unloading interlock host specific, used to determine whether the slave is unloading.
I58	Blocking	When the congestion input is valid in the bulk accumulation mode, unloading cannot be performed.
I59	Lifting Bag Request	Used to control the action of the bag lifting mechanism.
I60	Conveyor 1 Forward Run	In the stopped state, manually control the conveyor to start and rotate forward. (When the emergency stop signal is valid, the forward rotation output of conveyor 1 is invalid).
I61	Conveyor 1 Reverse Run	Control the conveyor to start and reverse. When the emergency stop signal is valid, the reverse output of conveyor 1 is invalid.
I62	Limit Position Of Conveyor 2	Conveyor 2 in position signal.
I63	Limit Position Of Conveyor 3	Conveyor 3 in position signal.
I64	Manual End	In running, the signal input is valid, the instrument automatically enters the result waiting, and the running state to a slow stop state.
I65	No Level Detection	If the signal is valid once, the instrument will shield the material level function. If it is valid again, the instrument will release the material level shielding.
I66	IN1(Read By COM)	When the input is valid, there will be corresponding valid states in the communication, mainly opening the switch input state for use
I67	IN2(Read By COM)	When the input is valid, there will be corresponding valid states in the communication, mainly opening the switch input state for use
I68	IN3(Read By COM)	When the input is valid, there will be corresponding valid states in the communication, mainly opening the switch input state for use
I69	IN4(Read By COM)	When the input is valid, there will be corresponding valid states in the communication, mainly opening the switch input state for use
I70	IN5(Read By COM)	When the input is valid, there will be corresponding valid states in the communication, mainly opening the switch input state for use
I71	Start/E-Stop(RF)	If the signal is valid, the instrument will enter the running state, and if it is invalid, it will return to the stopping state. This input is an edge detection signal.
I72	Start/Stop RF)	If the signal is valid, the instrument will enter the running state. If it is invalid, it will return to the stopped state after completing the current packaging process. This input is an edge detection signal.

Note: DISC Permissoin description: When working mode is with hopper AB dual scales, dual hopper dual clip bag AB individual, dual hopper dual clip bag AB comb, no hopper AB individual, no hopper AB comb, if define filling/disc flow allow input, then works as follow.

When scale A undefine filling / DISC permission, scale B define filling/disc allow. Scale A filling/disc is not controlled, run as formal process, scale B need filling/disc allow signal to control.

When scale A define filling/disc allow, scale B undefined filling/disc allow. Scale B filling/disc uncontrolled run as normal process, scale A need filling/disc allow signal to control.

When dual AB both define filling/DISC permission, scale A and scale B need separate filling/dics allow signal to control.

4.9 COM Master mode

Host mode can communicate with slave to send commands. When using host mode, pay attention to the following points:

- The communication parameters of serial port 2 are fixed in host mode. Only when the communication mode is Modbus-RTU mode can host mode be used, otherwise it is prohibited.
- In host mode, the starting address is fixed to 1.
- Successful write will return successful send; Write data failure returns send failure; when there is no return for a long time, the return send timeout.
- In host mode, changing the high and low bytes of serial port 2 will change the storage order of the data sent to the slave. The high and low bits correspond to each other and can be used when the data length is double word.

1. Slave COM ID	Initial value: **1**; **1 ~99** optiontal.
2. Data length	Initial value: Word. Word/Dword is optional
3. Start adderess	Initial value：**1**；**1~65535** optiontal，start at 0X0001 by default.
4. Data To Send	Initial value: **0**; **0 ~ 999999** optional.

5. Function Description

5.1 Setting the operating mode

1. Scale structure is Net Weigher mode，in each working mode:

Working Mode	A/B Hopper	A Hopper	B Hopper	A/B Dual Clamp-ers	A+B Dual Clampers
Individual Target Mode set to OFF	1） Set the target value to be greater than the hopper capacity of a single bucket, and the target value of a single scale will be automatically converted; 2） Set the target value to be less than or equal to the hopper capacity of a single bucket, and the target value for a single scale to be the target value;				
Individual Target Mode set to ON	Set A/B target value to be less than or equal to the hopper capacity of a single bucket	Set the target value of A to be less than or equal to the hopper capacity of a single bucket	Set the target value of B to be less than or equal to the hopper capacity of a single bucket	The target values for A and B can only be set to be less than or equal to the hopper capacity of a single bucket	The target values for A and B can only be set to be less than or equal to the hopper capacity of a single bucket

Attention: 1) Dual bucket dual bag independent mode. The dual bucket dual bag combination mode has two bag clamping mechanisms, and when started, the dual scales will simultaneously start feeding.
2) The bucket mode generally uses the dual scale working mode, while the other modes are the fault operation mode.

2. Scale structure is Gross Weigher mode

Working Mode	**Target value setting**
A/B NoneHpper	Individual Target Mode set to OFF，AB all use the total target values.
	Individual Target Mode set to ON，AB uses A/B target values respectively
A+B NoneHpper	Individual Target Mode set to OFF，AB all use the total target values.
	Individual Target Mode set to ON，AB uses A/B target values respectively

5.2 Batch

Batch is used for packaging frequency reminder，when automatic operation is completed and set batch is reached, controller show batch reach, alarm and shutdown, waiting for user to process，batch reach and alarm is valid, user can press【Clear Alarm】Key or to "clear alarm" input signal is valid, controller clears alarm. The batch number is zero, and then batch number judgment is not operated.

Batch range is 0~9999.initial default value is 0（No batch judgment）.

5.3 Filling Level Control

Depending on application difference, controller material tank's level gage mounting has two ways: Dual Supplement (Supplement Full, Supplement Empty), Single Supplement (Supplement Empty) and no filling level control.

5.3.1 Dual Supplement

Supplement full and Supplement NotEmpty are defined, corresponding to the case of dual level. In this situation, controller include filling control function,which control principle is: when Supplement full and Supplement NotEmpty input are invalid, controller filling output is valid, when Supplement full input is valid, filling output is invalid. Meanwhile, before filling（coarse flow, medium flow,fine flow），controller detect supplement empty

if is valid,if invalid wait for signal,only this signal is valid then start filling process.In the filling procession, controller do not detect Supplement NotEmpty signal if is valid.

5.3.2 Single Supplement

Supplement NotEmpty is defined; supplement full is undefined, corresponding to the case of signal level, controller do not contain filling control function, detect supplement empty before filling,waiting for the signal when Supplement NotEmpty is invalid ,only the signal is valid, then start filling process.controller do not detect Supplement NotEmpty signal if is valid when filling.

Supplement NotEmpty and supplement full are undefined, corresponding to the no material level editor. Controller do not control filling, do not detect Supplement NotEmpty signal if is valid when filling.

5.4 Quick Setup

In stop mode, quick modify recipe data stored in real time.

Modification of runtime data, a zero value is stored in real-time, other parameters after exiting the quick setup interface, automatic updates are operated (combined mode need to unlock bags , start to run the next scale then target value is updated) when the next scale started.

Finished modifying the recipe parameters when running, but not yet reached the next scale update, the emergency stop signal is input into the controller, controller in stop mode, recipe update immediately.

The recipe value and advance value can be modified when communicating in modbus protocol.

5.5 U disk update software

5.5.1 Foreground update process

1.	Plug the USB drive containing the upgrade kit "tpcbackup" into the controller
2.	Click "Yes" to enter the system setting interface and start the comprehensive feature pack. Click "No" to exit. "Click" Yes "to pop up the" User Project Update Button ".
3.	After clicking the "User Project Update" button, select the project to download
4.	After download will restart automatically

5.5.2 Background update process

1.	Insert U disk to computer, creat new folder "GM9907 - LD" in the U dish;
2.	Save **“GM9907-L-Upload.gm”** to folder **“GM9907-LD”**
3.	Plug the USB disk into the controller, switch to the administrator authority, to the Maintenance – Firmware Update interface, long press the blank in the lower right corner of 5S, and the " Update " button pops up, jump to the upgrade interface, click " Update ", click " Update " again, and the words " Updating " appear, controller is upgrading the background
4.	When the progress bar is finished, the upgrade will be successful after the countdown of 10s and the login interface will be switched to.

5.6 U disk update boot interface

1.	Save the image file (resolution 800*480, format.bmp) into the root directory of U disk containing the project package (tpcbackup)(Note: the upgrade kit "tpcbackup" is different from this tpcbackup)
2.	Insert U disk to controller
3.	Controller pops up the display of 【USB disk kit】, and select “Update startup

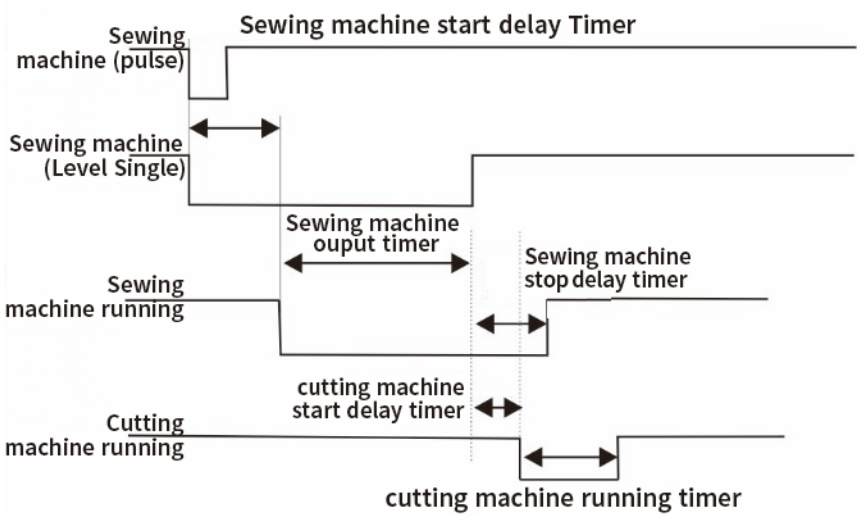
	bitmap".
4.	Enter the LOGO selection interface, select the picture to be upgraded, and click OK. It will prompt you to restart after successful bitmap update

5.7 Sewing control

The function of sewing machine involves I/O Module: “Sewing ON ", " Cutter Work ", " Sewing Start ", " Sewing Stop ".

Mode 1 (Sewing ON Timer not 0): Sewing Start (Pulse) signal valid, sewing working process begin, first start is Sewing Start Delay Timer, delay timer finish, sewing starts, then sewing on, Sewing ON Timer finish, starts Sewing Stop Delay, meanwhile starts Cutter Start Delay Timer, Sewing Stop Delay finish sewing output invalid, when cutter Start Delay Timer finish, cutter starts to work, work time is Cutter Work Timer, Cutter Work Timer finish, cutter stop working. Process is finish.

Mode 2 (Sewing ON Timer is 0): Sewing Start (Level Signal) signal is valid, starts Sewing Start Delay Timer, timer finish re-test Sewing Start signal if is valid, if invalid, Sewing ON signal is off, delay timer finish, sewing starts to work, continuous output time is Sewing ON Timer, when Sewing ON Timer is finish, starts Sewing Stop Delay timer, meanwhile starts Cutter Start Delay Timer. Sewing continue work, continuous output time is Sewing Stop Delay timer. Cutter Start Delay timer, when Cutter Start Delay time is finish, cutter starts to work, work time is cutter work timer, cutter work timer finish, cutter stop working.



5.8 DISC Shaking

Individual Shaking:

Example of using the unloading vibration A scale function:Set the DISC shaking mode is individual shaking. When the equipment starts unloading in running state, it starts timing. When the DISC ON Timer exceeds the DISC shaking on timer and the weight of the measured material has not returned to the zero zone, the A:DISC shaking output is valid (this output is a pulse, the effective time is the DISC shaking time, and the invalid time is the DISC shaking OFF timer). After the DISC shaking times is reached, if the current weight of the measuring bucket has not fallen below the zero zone, the instrument will output DISC overtime alarm and return to the stop state. When the DISC shaking times has not reached or just ended, and the weight of the material in the measuring hopper is less than the zero zone value, the DISC delay time is activated. After the delay, the weighing process ends.

DISC Shaking:

Example of using the unloading vibration A scale function: Set the DISC shaking mode is DISC shaking. At this point, the output of the switch quantity to control the discharge door should be selected as A:DISC shaking(the discharge vibration output at this point controls both the discharge door output and the discharge vibration (by opening and closing the discharge door to achieve vibration function)). In running state, when the equipment starts unloading, the "DISC shaking output" is effective and starts timing. When the DISC ON Timer exceeds the set DISC shaking on timer and the weight of the material in the measurement has not returned to the zero zone, the unloading vibration A output is effective (this output is a pulse, the effective time is the DISC shaking time, and the invalid time is the DISC shaking OFF timer). After the DISC shaking times is reached, if the current weight of the measuring bucket has not fallen below the zero zone, the instrument will output an unloading timeout alarm and return to the stop state. When the DISC shaking times has not reached or just ended, and the weight of the material in the measuring hopper is less than the zero zone value, the DISC delay time is activated. After the delay, the weighing process ends.

5.9 Overtime Alarm of filling and discharge function

Take scale A coarse flow filling overtime function for example: turn on the fill&DISC monitor fuction, in the running state, when Scale A starts coarse flow, starts timing, if scale A coarse flow time exceeds A:Co-fill time, controller output alarm, and back to stop state.

Take scale A discharge overtime function for example: turn on the fill&DISC monitor fuction, in the running state, when Scale A begins discharge, starts timing, if scale A discharge time exceeds A:Co-fill time, controller output alarm, and back to stop state.

5.10 Auxiliary pulse function

When controller in stop or opertate state, I/O module input I39 (Aux. Pulse 1 Ctrl) is valid, then I/O Module output O53 (Aux. pulse O1) starts output, the valid time of continuous output is the valid time of auxiliary pulse 1 output, when time is up, stop output, after waiting for the invalid output time of auxiliary pulse 1 to arrive, the output starts again. Stop output until the total operation time of auxiliary pulse 1 reaches, and input I39 Aux. Pulse 1 Ctrl is invalid. If auxiliary pulse 1 operation total time is set to 0, then the auxiliary pulse output process will continue to loop.

If auxiliary pulse operate process I/O module input I39 (Aux. Pulse 1 Ctrl) is valid, then auxiliary pulse 1 output (O53) will stop output.

5.11 Adaptive function

The adaptive function omits the steps of manual adjustment and can automatically adjust the filling speed and accuracy.After this function is process, it will automatically adjust the parameters of Coarse Flow Remains, Medium Flow Remains, Fine Flow Remains, COMP. Inhibit Timer(Co-F), COMP. Inhibit Timer(Me-F), COMP. Inhibit Timer(Fi-F) and so on in the process of filling, so as to achieve the optimal filling speed and accuracy.(after the is turned on, controller will display the current modified parameters in real time.)

Adaptive use:

Mode 1: set all the advance parameters (set the advance parameters, only roughly accurate), controller will be on the basis of the current advance, according to the changes in the warehouse pressure, etc., constantly modify the advance parameters, to achieve an optimal state.(this method is recommended)

Mode 2: if all the current remains are 0, when the first scale starts, controller will control the scale body and automatically find the corresponding remains.The first scale may be inaccurate, but after a few times of work, will find the corresponding accurate amount to reach an optimal state.

Note:

1. It is suggested to add material level ON/OFF to ensure the stability of material flow. Controller also has the function of judging whether the material flow is stable, but not all of

them can be judged successfully.

2. If drop correction and adaptive function are opened at the same time, the drop correction function will be forcibly closed.

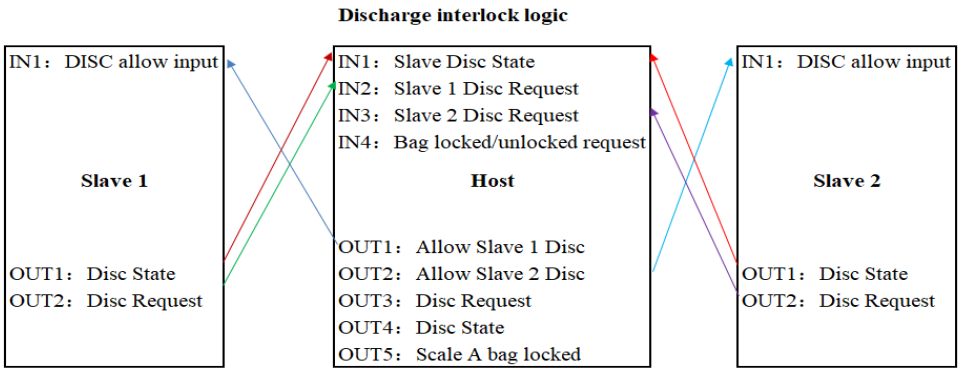
3. In the normal filling process, if there is an occasional overshoot, it can be considered to increase the adaptive level.

5.12 Hanger up control function

In the gross weigher mode, start the controller, controller up signal output, wait for after the up delay, began to tare (net weight), if the patting mode is enabled, the up signals with pat bags for output (patting bag when output is invalid, up, pattingt bags output is valid, the upside is invalid), when hold after patting bag is the same. When the hanger up signal is invalid, the hanger up delay starts. When the hanger up delay ends, the bag starts to unlock.When the controller is in the stop state, when the hanger up signal is valid, the hanger up; when the up signal is invalid, the hanger down.

5.13 DISC interlock function

Diagram of I/O connections between instruments:



Master：When the master DISC interlock switch is turned on, it is the host,control the discharging from the machine. Define the clamping bag for the host and handle the clamping bag logic.

Slave：When he master DISC interlock switch is turned off, it becomes a slave machine. The clamp bag input is not defined, and the discharging input is defined to control the discharging. When any scale in the interlocking system is weighed, the discharging request output of the host is valid. At this time, an external host bag clamping signal is input. After the bag clamping is completed, only one scale among the weighed scales will unload, and the rest of the scales will continue to wait. After discharging is completed, the host performs a bag loosening action, and continues to wait for the bag to be clamped before discharging another package.

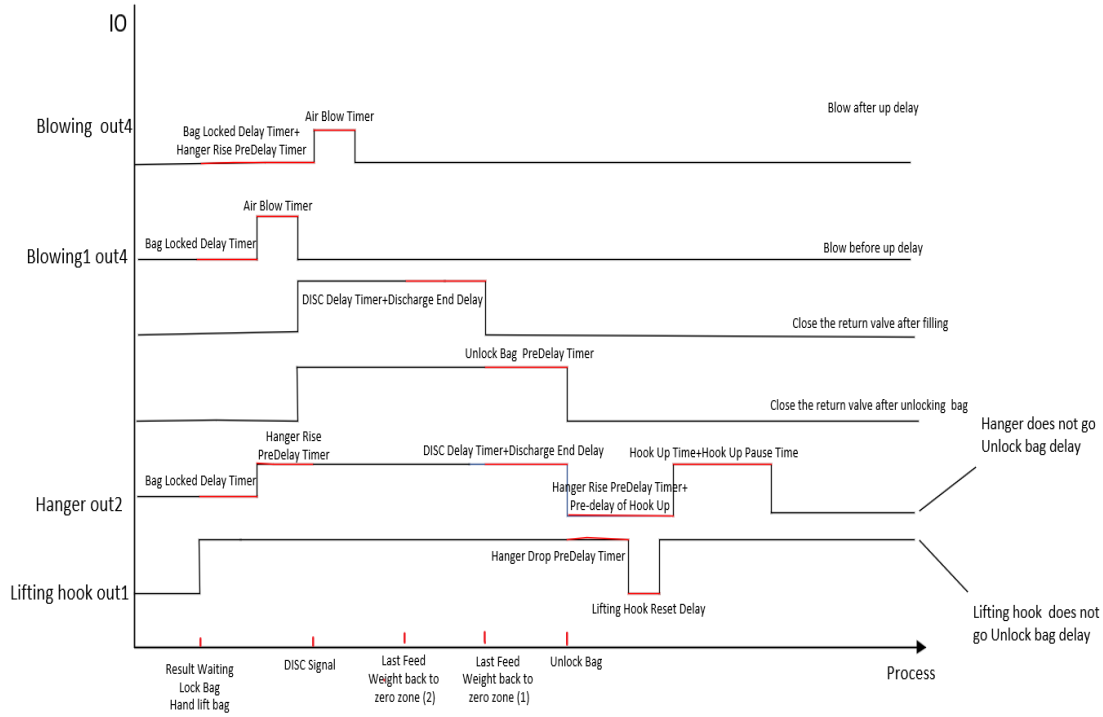
5.14 Binyes multi-scale function

Scale Structure：Net Weigher；Working Mode：A/Bhopper/A hopper/B hopper, and the total target value is greater than the hopper capacity of a single bucket;

Start the instrument, filling to the result waiting, give the instrument bag clamping signal, and then give the instrument bag hanging signal. The instrument bracket has an effective upward output, and wait for the upward delay before reaching the desired position. The instrument begins discharging (the bracket must be in place before discharging). After discharging, the weight returns to the zero zone, and the second scale is used for feeding. When the last scale unloads, the

instrument bag clamp output is invalid, and the bracket begins to descend (the bracket upward output is invalid). After waiting for the downward delay to end, the hanging bag output is invalid. After the downward delay is completed, continue to disconnect the hook upward delay, and when the bracket ascends, the bracket output is valid. The packaging process of the Douduo scale has ended.

5.15 Conveyor 3 level function



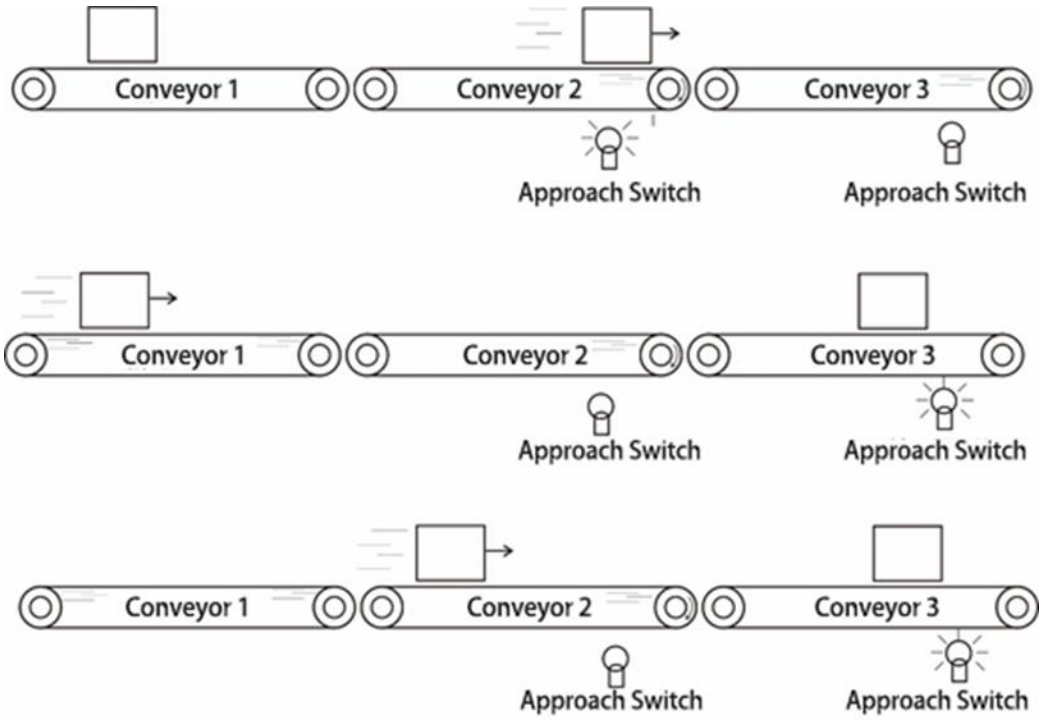
The level 3 conveyor currently only supports the binyes multi-scale mode: 3 conveyors are placed under the scale, and the conveyor 1 is placed under the scale, after a bag of materials is decoupled, it is placed on the conveyor 1. Conveyor 2 is behind conveyor 1. Conveyor 3 is behind conveyor 2. The ends on conveyors 2 and 3 respectively have a limit switch (proximity switch).

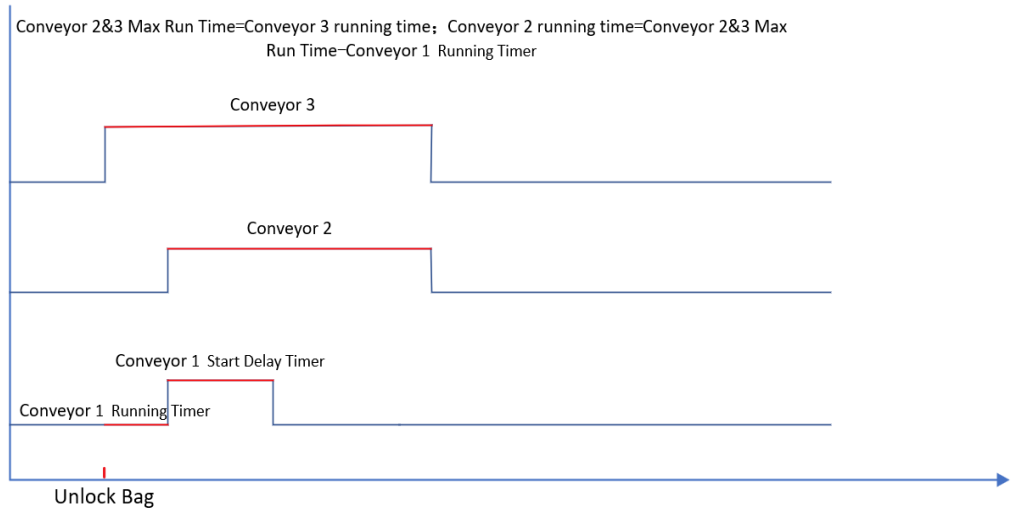
1） After the decoupling upstream process is completed, start the conveyor 1. When material 1 is transferred to conveyor 2, conveyor 2 is started, and the upper limit switch (proximity switch) of conveyor 2 is effective, conveyor 1 is still running and conveying.

2） When the material is transported to the conveyor 3, the upper limit switch of the conveyor 3 (proximity switch), when effective, the conveyor 3 stops running and waits for the forklift to shovel the material 1.

3） Before starting, when there are materials on conveyor 3 and conveyor 2, that is, when the limit switches of conveyor 2 and conveyor 3 are both effective, conveyor 1, conveyor 2 and conveyor 3 will not rotate, and the materials of conveyor 3 will be shoveled away by the forklift, that is, when the limit switches of conveyor 3 are invalid, conveyor 3 will run. After starting, conveyor 2 limit, conveyor 3 limit no material, conveyor 1 run until the completion of conveyor 1 running time.

Each time you prepare to loosen the bag, determine whether to start conveyor 1, conveyor 2, conveyor.


Conveyor 1
Conveyor 2
Conveyor 3
Approach Switch
Approach Switch
Conveyor 1
Conveyor 2
Conveyor 3
Approach Switch
Approach Switch
Conveyor 1
Conveyor 2
Conveyor 3
Approach Switch
Approach Switch


Conveyor 2&3 Max Run Time=Conveyor 3 running time；Conveyor 2 running time=Conveyor 2&3 Max Run Time−Conveyor 1 Running Timer
Conveyor 3
Conveyor 2
Conveyor 1 Start Delay Timer
Conveyor 1 Running Timer
Unlock Bag

6. Serial port communication

GM9907-LD It provides two serial port， and serial port 1 and 2 can be selected in a continuous manner, Modbus mode,print, Re-ContA and Re-ContB protocol.The controller for the first serial port is RS-232， the second is RS-485. The network port communication is fixed over Modbus-TCP, and the instrument can be cascaded.

6.1 Printing method

When serial port parameter port 1 or 2 choose print mode, corresponding to the serial port can be connected to a serial printer to print the contents accumulated by implementation-dependent.

Print mode communication parameters refer to serial port parameters, need to note:

1） **Baud Rate**——parameters need to consist with connected printer.

2） **Communication format**——parameters need to consist with connected printer.

Note: When printing options for Chinese language, can not use the data bits to 7 formats, otherwise there will be printing error.

3） **Print format**——Peripheral parameters can be setted by print format of 24 or 32 formats. Besides by peripherals parameters printing language is Chinese or English.

6.1.1 Auto Print

In printing mode, the parameters of the peripheral automatically print ON/OFF is set to open. So after each weighing is completed, controller automatically prints the weighing result of this times.

In net weigher and gross weigher mode, the format as follow:

English 24 print formats are as follows:

Packing list

Unit: kg

Recipe Number: 20

The total cumulative number of results

————————————————————

1 5.50

2 5.50

English 32 print formats are as follows:

Packing list

Unit: kg

Recipe Number: 20

Total ACUM PCS	target value	result
3	5.60	5.50
4	6.00	5.80

In bulk scale mode, the format as follow:

English 24 print formats are as follows:

&

Receipt and delivery list
Scale No.: **1** Recipe ID: 1
Total：0.00
Time: 2022/01/21 13:30
Unit: kg
————————————————————

ACUM PCS	Results
12	13.58
13	13.58
14	13.58
15	13.58

English 32 print formats are as follows:

&

Receipt and delivery list
Scale No.: **1** Recipe ID: 20
Total：0.00
Time: 2022/01/21 13:31
Unit: kg

ACUM PCS	Results	Total receipt/delivery
21	13.58	240.40
22	13.58	253.98
23	13.58	267.56

6.1.2 Total ACUM print

In printing mode, stop, press shortcut key, and enter ACUM and Batch interface, press Print total ACUM.

In bucket scale and no hopper scale mode, the format as follow:

English 24 print formats are as follows:

Total ACUM Report
Time: 2018/6/19 13:28
Unit: kg
————————————————————
Total ACUM PCS: 18

Total ACUM WT: 84. 16

English 32 print formats are as follows:

Total ACUM Report

Time: 2018/6/19 13:36

Unit: kg

Total ACUM PCS： 24

Total ACUM WT: 129. 40

In bulk scale mode, the format as follow:

English 24 print formats are as follows:

Total ACUM Report

Scale No.: **1** Recipe ID: 1

Total： 0.00

Time: 2022/01/21 13:30

Flow rate:257.30t/h

Total receipt/delivery:

471. 26kg

Total ACUM:

471. 26kg

English 32 print formats are as follows:

Scale No.: **1** Recipe ID: 1

Total： 0.00

Time: 2022/01/21 13:31

Flow rate:257.30t/h

Total receipt/delivery: 471. 26kg

Total ACUM: 471. 26kg

6.1.3 Recipe ACUM print

In printing mode, stop, press【Statistic】shortcut key, and enter interface. Under the【Recipe ACUM】 interface，click 【Data Edit】and select 【Print Select Recipe ACUM Data】in the pop-up box,then choose the corresponding recipe to print.

Press Print All recipe ACUM, to print all formulations (1 to 40) is accumulated, the

meter will automatically skip the target value 0 is not printed formulations. Format is as follows:

English 24 print formats are as follows:

Recipe ACUM Report
Time: 2018/6/19 13:29
Unit: kg
————————————

Recipe ID:	20
Rec. ACUM PCS:	18
Rec. ACUM WT:	84. 16

————————————

English 32 print formats are as follows:

Recipe ACUM Report
Time: 2018/6/19 13:36
Unit: kg
————————————————————

Recipe ID:	20
Rec. ACUM PCS:	24
Rec. ACUM WT:	129. 40

————————————————————

6.1.4 User ACUM print

In printing mode, stop, press【Statistic】shortcut key, and enter interface. Under the 【User ACUM】 interface，click 【Data Edit】and select 【Print Select User ACUM Data】 in the pop-up box,then choose the corresponding user to print.

Press Print All user ACUM, to print all users (1 to 9) is accumulated, the controller will automatically skip the user's cumulative user 0 is not printed. Format is as follows:

English 24 print formats are as follows:

User ACUM Report
Time: 2018/6/19 13:29
Unit: kg
————————————

User ID:	9
User ACUM PCS:	16
User ACUM WT:	72.26

————————————

English 32 print formats are as follows:

User ACUM Report
Time: 2018/6/19 13:37
Unit: kg
————————————————————

User ID:	9
User ACUM PCS:	22
User ACUM WT:	117. 50

————————————————————

6.2 Continuous mode

A continuous manner, the meter sends the meter serial port results in outward selected serial communication port 1 or 2 selected.

6.2.1 Continuous mode data frame format is as follows:

STX	Scale No.	**R**	**T**	**SP**	**SP**	ACUM Times	**,**	ACUM Weight	**CRC**	**CR**	**LF**

Among them:

R —— **52H**
T —— **54H**
SP —— **20H**

ACUM Times --9 bytes 000000000 to 999999999
ACUM Weight --10 bytes containing the decimal point
Controller such as issue data (in hexadecimal form):

02 30 31 52 54 20 20 20 20 20 20 20 20 31 30 30 2C 20 20 20 20 30 2E 35 30 30 30 32 39 0D 0A

It said: # 1 scale, the current cumulative number of 100 times, the cumulative weight of 0.5000.

6.3 Modbus-RTU protocol

In the serial communication port 1 or 2 is selected Modbus-RTU mode.

6.3.1 Function code and abnormal code

◆ Controller function codes supported：

Function code	name	Explanation
03	Read register	Up to 125 single read registers
06	Write Single Register	
16	Write Multiple Registers	The controller supports a write command is only double register, the address must be aligned, not allowed writing only a portion of the double register is written, allowing read-only portion read out.
01	Read coil	Note that this is the bit length units
05	Write coil	

Note: The controller only supports MODBUS function code above, will not be the controller response function code to other controllers.

◆ MODBUS exception code in response to

Code	name	Meaning
02	Illegal Data Address	For this controller, the data representing the address of the error code is an address not allowed.
03	Illegal data value	And writing the data portion of the permitted range.
04	Slave failure	When the controller is attempting to perform the requested operation, resulting in unrecoverable error.
07	Unsuccessful programming request	For controllers, the the received command can not be executed under the current conditions.

6.3.2 MODBUS transmission mode

The transmission mode is MODBUS RTU mode.

When communication with the RTU mode, information of each 8-bit byte is divided into two 4-bit transmission character hexadecimal.

Data Format: **8** Data bits, **1Stop** bit, even parity (**8-E-1**)

8 Data bits, **1Stop** bits, no parity (**8-N-1**)

Baud rate: **9600/19200/38400/57600/115200**(Choose one)

Code: RTU

6.3.3 MODBUS address assignment

<table>
<tr><th>Protocol address</th><th>PLC address</th><th>Meaning</th><th colspan="2">Description</th></tr>
<tr><td colspan="5">Read only register</td></tr>
<tr><td>0000-0001</td><td>40001-40002</td><td>Scale A present weight</td><td colspan="2">The weight of scale A on the controller is shown</td></tr>
<tr><td rowspan="4">0002-0003</td><td rowspan="4">40003-40004</td><td rowspan="4">Scale A present weight state</td><td>Bit</td><td>Instructions</td></tr>
<tr><td>D0</td><td>Unstable weight: 0. Stable: 1.</td></tr>
<tr><td>D1</td><td>Non-zero:0. Zero: 1.</td></tr>
<tr><td>D2</td><td>Symbol of present weight: +/-</td></tr>
</table>

				Positive: 0. Negative: 1.
			D3	Overflow
			D4	Positive overflow
			D5	Negative overflow
			D6	Load cell positive overflow
			D7	Load cell negative overflow
			D8	Stable millivolt: 1. Unstable: 0.
			D9~31	Reserve
0004-0005	40005-40006	Scale B present weight	The weight of scale **B** on the controller is shown	
0006	40007	Scale B present weight state	D0	Unstable weight: 0. Stable: 1.
			D1	Non-zero:0. Zero: 1.
			D2	Symbol of present weight: +/- Positive: 0. Negative: 1.
			D3	Overflow
			D4	Positive overflow
			D5	Negative overflow
			D6	Load cell positive overflow
			D7	Load cell negative overflow
			D8	Stable millivolt: 1. Unstable: 0.
			D9~31	Reserve
0008-0009	40009-40010	Scale A & Scale B control state	D0	0: Stop. 1: Run.
			D1	Alarm
			D2	Batch completed
			D3	Bag locked
			D4	Upper level
			D5	Under Level
			D6	Filling material
			D7	Lack material
			D8	Patting bag
			D9	Conveyor output (no hopper)
			D10	Coding output
			D11	Sewing machine output
			D12	cutting machine output
			D13	Auxiliary pulse 1
			D14	Auxiliary pulse 2
			D15	Auxiliary pulse 3
			D16	Auxiliary pulse 4
			D17	Relay output 1
			D18	Relay output 2
			D19	Relay output 3
			D20	Relay output 4
			D21	Relay output 5
			D22	Relay output 6
			D23	In the suspension
			D24	Metering Hanger Up A
			D25	Metering Hanger Up B
			D26	Last Feed
			D27	Blocking
			D28	Lifting Hook
			D29	DISC Completed
			D30-31	Reserve
0010-0011	40011-40012	Scale A control state	D0	Before scale A filling
			D1	Scale A Coarse Flow
			D2	Scale A Medium Flow
			D3	Scale A Fine Flow
			D4	Scale A value
			D5	Scale A discharge

			D6	Scale A zero zone
			D7	Scale A overlimit
			D8	Scale A underlimit
			D9	Scale A qualified
			D10	Scale A over/under pause
			D11	Scale A bag locked (no hopper)
			D12	Scale A patting bag
			D13	Scale A coding output
			D14	0:Gross weight, 1:Net weight
			D15	A: DISC Shaking
			D16	A:Weight OK
			D17	A:DISC Completed
			D18~31	Reserve
0012-0013	40013-40014	Scale B control state	Referring to Scale A control state	
0014-0015	40015-40016	Total accumulated weight (0~999999999)		
0016-0017	40017-40018	Total accumulated bags (0~999999999)		
0018-0019	40019-40020	The current recipe cumulative weight (0~999999999)		
0020-0021	40021-40022	The current recipe cumulative bags (0~999999999)		
0022-0023	40023-40024	User accumulated weight (0~999999999)		
0024-0025	40025-40026	User cumulative bags (0~999999999)		
0026-0027	40027-40028	Scale A previous weight value		
0028-0029	40029-40030	Scale B previous weight value		
0030	40031	Scale A alarm information		0. No alarm 1. Unable to start for unreasonable recipe setting. 2. Unable to start as the maximum capacity of the hopper is 0. 3. Weight value exceeds zero range when zeroing; 4. Weighing value is unstable when zeroing. 5. Over/Under alarm. 6. The target value of single scale can not be set as 0 or the full capacity is too large. 7. The target value is bigger than maximum capacity value. 8. Weight value or load cell is overlimit when start. 9. Discharge gate is sepearated from limit digit. 10. Not bag locked. 11. Zeroing in the process of running. 12. Zeroing over range in the process of running. 13. Zeroing is not unstable in the process of running. 14. The motor parameters is unreasonable (normal motor) 15. Reserve
0031	40032	Scale B alarm information		
0032-0033	40033-40034	Normal alarm information (Need to be manually cleared) (changes to the high and low bytes do not affect the status bit)		**0-** No alarm; **1-** Batch completed; **2-** Scale A Over/Under pause **3-** Scale B Over/Under pause **4-** Motor filling gate of scale A closed over time alarm **5-** Motor filling gate of scale B closed over time alarm **6-** Scale A bag locked over time alarm **7-** Scale B bag locked over time alarm

			8- Scale A bag unlocked over time alarm **9-** Scale B bag unlocked over time alarm **10-** Scale A discharge gate closed over time alarm **11-** Scale B discharge gate closed over time alarm **12-** Scale A discharge gate opened over time alarm **13-** Scale B discharge gate opened over time alarm **14-** Scale A fill gate not closed in place alarm. **15-** Scale B fill gate not closed in place alarm. **16-** Scale A discharge gate not closed in place alarm. **17-** Scale B discharge gate not closed in place alarm. **18-** The communication is abnormal of main board and addition board. **19-** Scale A coarse filling overtime alarm **20-** Scale B coarse filling overtime alarm **21-** Scale A medium filling overtime alarm **22-** Scale B medium filling overtime alarm **23-** Scale A fine filling overtime alarm **24-** Scale B fine filling overtime alarm **25-** Scale A discharge overtime alarm. **26-** Scale B discharge overtime alarm **27-** Scale A discharge patting overtime alarm 28-Scale B discharge patting overtime alarm
0034	40035	Scale A & Scale B calibration alarm(changes to the high and low bytes do not affect the status bit)	**0-** No alarm **1-** Maximum range is too small **2-** Maximum range is too large **3-** Zero voltage is too high **4-** Zero voltage is too low **5-** Unstable zero point **6-** Gain voltage is too large **7-** Gain voltage is too small **8-** Scale platform is unstable **9-** Weight value input is error **10-** Resolution is low after calibration. **11-** Manual Coarse Flow then Manual Discharge(material calibrate alarm) **12**:Reserve
0035	40036	A Previous scale Coarse Flow Timer Unit: s	
0036	40037	A Previous scale Medium Flow Unit: s	
0037	40038	A Previous scale Fine Flow Unit: s	
0038	40039	A Previous scale WAIT Timer Unit: s	
0039	40040	A Previous scale Discharge Timer Unit: s	
0040	40041	A Previous scale Total Timer Unit: s	
0041	40042	B Previous scale Coarse Flow Timer Unit: s	
0042	40043	B Previous scale Medium Flow Unit: s	
0043	40044	B Previous scale Fine Flow Unit: s	
0044	40045	B Previous scale WAIT Timer Unit:s	
0045	40046	B Previous scale Discharge Timer Unit: s	
0046	40047	B Previous scale Total Timer Unit: s	

0047	40047	Scale A packing finish signal		Initial value：0，0~9999(this data will not be saved)
0048	40048	Scale B packing finish signal		Initial value：0，0~9999(this data will not be saved)
0049	40050	Reserve		
Allow to read & write register				
Calibration parameter				
0050	40051	Unit	Initial value: 1;0-g, 1-kg, 2-t, 3-lb	
0051	40052	Decimal point	Initial value: 2 0-0 , 1-0.0, 2-0.00, 3-0.000, 4-0.0000.	
0052	40053	Division	Initial value: 1, (1/2/5/10/20/50)	
0053-0054	40054-40055	Maximum range	Initial value: 10000. The write range (maximum range value≤minimum division*100000, not more than 999999.)	
0055-0056	40056-40057	Scale A calibration with weights	Zero calibration with weights	If write in 1, the present weight will be set as zero point, which is allow to write in when weigher platform is stable. Return to present zero voltage when read.
0057-0058	40058-40059		Gain calibration with weights	Input standard weight value(≤maximum range); Read relative zero millivolt of present load cell.
0059-0060	40060-40061	Scale A calibration without weights	Zero calibration without weights	Write millivolt value which is calibrated as zero. Return to present zero millivolt when reads.
0061-0062	40062-40063		Gain calibration with weights (gain millivolt value)	Write in millivolts of gain weight and save it. Returns to absolute millivolt of present weight when reads. (If present millivolt is too small or too large can not be calibrated then returns 0XFFFF.).
0063-0064	40064-40065		Gain calibration without weights(gain weight value)	Write in weight value of gain millivolt, user must write in gain millivolt before write in this value. Return to 0000H when reads.
0065-0066	40066-40067	Scale B calibration with weights	Referring to Scale A zero calibration with weights.	
0067-0068	40068-40069		Referring to Scale A gain calibration with weights	
0069-0070	40070-40071	Scale B calibration without weights	Referring to Scale A zero calibration without weights	
0071-0072	40072-40073		Referring to Scale A gain calibration without weights (gain millivolt value)	
0073-0074	40074-40075		Referring to Scale A gain calibration without weights (gain weight value)	
0075-0076	40076-40077	Manual Filling Timer	Initial Value: 0 Range:0.0~9.9	
0077-0078	40078-40079	A Material Calibration	Click the manual discharge in the material calibration, input the corresponding weight, and read it as 0 (note: it can only be used in the material calibration).	
0079-0080	40080-40081	B Material Calibration	Click the manual discharge in the material calibration, input the corresponding weight, and read it as 0 (note: it can only be used in the material calibration).	
0081-0099	40082-40100	Reserve		

Other parameters			
0100	40101	Recipe No.	Initial value: 1, range:1-40
0101	40102	Batches	Initial value: 0, range: 0~9999
0102	40103	Accumulative batches	Read-only
0103	40104	Controller locked	0- unlocked; 1- locked
0104	40105	Year	0-99
0105	40106	Month	1-12
0106	40107	Day	1-31
0107	40108	Time	0-23
0108	40109	Minute	0-59
0109	40110	Second	0-59
0110~0119	Reserve		
Recipe parameters-Filling Values			
0120-0121	40121-40122	Total target value	Weight value writing range: ≤ Maximum range
0122-0123	40123-40124	Scale A target	With hopper: Weight value writing range: ≤The maximum capacity of single hopper No hopper: Weight value writing range: ≤ The maximum full capacity
0124-0125	40125-40126	Scale B target	
0126-0127	40127-40128	Scale A Coarse Flow Remain	
0128-0129	40129-40130	Scale A Medium Flow Remain	
0130-0131	40131-40132	Scale A free fall	
0132-0133	40133-40134	Scale B Coarse Flow Remain	
0134-0135	40135-40136	Scale B Medium Flow Remain	
0136-0137	40137-40138	Scale B free fall	
0138-0139	40139-40140	Zero zone value	
Recipe parameters-Filling Timer			
0140	40141	Filling PreDelay Timer	Initial value: 0.5s；Range: 0.0～99.9s.
0141	40142	Scale A Coarse Flow inhibit timer	Initial value: 0.9s；Range: 0.0~99.9s
0142	40143	Scale A Medium Flow inhibyte timer	Initial value: 0.9s；Range: 0.0~99.9s
0143	40144	Scale A fine filling inhibyte timer	Initial value: 0.9s；Range: 0.0~99.9s
0144	40145	Scale B Coarse Flow inhibyte timer	Initial value: 0.9s；Range: 0.0~99.9s
0145	40146	Scale B Medium Flow inhibyte timer	Initial value: 0.9s；Range: 0.0~99.9s
0146	40147	Scale B Fine Flow inhibyte timer	Initial value: 0.9s；Range: 0.0~99.9s
0147	40148	Over/Under Check Timer	Initial value: 0.5s；Range: 0.0～99.9s.
0148	40149	Result Waiting Timer	Initial value: 0.5s；Range: 0.0～99.9s.
0149	40150	Discharge delay timer	Initial value: 0.5s；Range: 0.0～99.9s.
0150	40151	Discharge interlock timer	Initial value: 0.5s；Range: 0.0～99.9s.
0151	40152	Bag locked delay timer	Initial value: 0.5s；Range: 0.0～99.9s.
0152	40153	Unlocked Bag PreDelay timer	Initial value: 0.5s；Range: 0.0～99.9s.
0153	40154	Discharge end delay	Initial value: 0.5s；Range: 0.0～99.9s.
Recipe parameters-Over/Under Parameters			
0154	40155	Over/Under ON/OFF	Initial value ：0，1：ON 0：OFF
0155	40156	Over/Under pause ON/OFF	Initial value ：0，1：ON 0：OFF
0156-0157	40157-40158	Over value	Weight value writing in range≤ maximum range
0158-0159	40159-40160	Under value	
0160	40161	Under supplementary ON/OFF	Initial value: 0；1: ON. 0: OFF
0161	40162	Under supplementary times	Range: 1 ~ 99. Initial value: 1
0162	40163	Effective filling time	Initial value: 0.5s.；Range: 0.0~99.9s
0163	40164	Ineffective filling time	Initial value: 0.5s.；Range: 0.0~99.9s
Recipe parameters - free fall correction controlling parameters			
0164	40165	Free fall correction ON/OFF	Initial value: 0, 1: ON. 0: OFF
0165	40166	Free fall correction times	Range: 1 ~ 99. Initial value: 1.
0166	40167	Free fall correction range	Range: 2.0, range: 0.0~9.9, unit:%
0167	40168	Free fall correction percentage	Initial value: 1. 0--100% correction; 1--50% correction; 2-25% correction.

0168	40169	Adaptive parameters real-time refresh ON/OFF	Initial Value: 0 0: dis-refresh 1: refresh in realtime
0169	40170	Hanger up delay timer	Initial Value:5.5，range:0-99.9
0170	40171	Hanger down delay timer	Initial Value:5.5，range:0-99.9
0171	**40172**	Fast Mode ON/OFF	Initial Value :0,1:ON;0:OFF
0172	**40173**	Fast Mode Timer	Initial Value:0, range:0-1000ms
0173-0174	**40174-40175**	Fast Mode Weight A	Initial Value:0, range:0.0- Full capacity
0175	**40176**	Fast Mode Correction	Initial Value:5， range:0-10
0176	**40177**	Stabilization	Initial Value:100,range:0.0-1000
0177-0178	**40178-40179**	Fast Mode Weight B	Initial Value:0,range:0.0-Full capacity
0179	**40180**	Discharge End Delay	Initial Value:0,range:0.0-99.9
0180	**40181**	Binyes Multi-Scale ON/OFF	Initial Value:0,1:ON;0:OFF
0181	**40182**	Blowing Mode	Initial Value:0， range：0-1 0：Air Blow Before Up Delay 1: Air Blow After Up Delay
0182	**40183**	Return Valve	Initial Value:0， range:0-1 0：Close Return Valve After Fill, 1： Close Return Valve After Unlock Bag
0183	**40184**	Air Blow Timer	Initial Value:0.5,range:0.0-99.9
0184	**40185**	Lifting Hook Reset Delay	Initial Value:0.0,range:0.0-99.9
0185	**40186**	Hook Up For Release	Initial Value:0,1:ON;0:OFF
0186	**40187**	Pre-delay of Hook Up	Initial Value:0.0,range:0.0-99.9
0187	**40188**	Hook Up Time	Initial Value:0.0,range:0.0-99.9
0188	**40189**	Hook Up Pause Time	Initial Value:0.0, range:0.0-99.9
Weighing parameter 1			
0200	40201	Power up auto-zero ON/OFF	Initial value: 0, 1: ON, 0: OFF
0201	40202	Zero range	Initial value: 50, range: 1-99
0202	40203	STAB range	Initial value: 2, stable range: 0 ~ 99d optional
0203	40204	STAB time	Initial value: 0.3s; range: 0.1~9.9（s）
0204	40205	TrZero range	Initial value: 0, range: 0-9（d）
0205	40206	TrZero time	Initial value: 2.0; range: 0.1~99.9s
0206	40207	Digital filtering Strength	Initial value: 7, range: 0-9
0207	40208	Bynamic Filter ON/OFF	Initial value: 1, 1: ON, 0: OFF.
0208	40209	AD sample rate	Initial value：1。0:120；1:240；2:480；3:960
0209~0214	40210~40215	**Reserve**	
Weighing parameter 2			
0215	40216	PreFill Zero Interval	Initial value: 0, range: 0-99. To enter zeroing after several packagings completed.
0216	40217	Result Check Mode	Initial value: 0 (range: 0, 1.) 0: stable and value. 1: value delay.
0217	40218	Weight value holding with hopper ON/OFF	Initial value: 0; range: 0-1 (0: OFF; 1: ON)
0218	40219	Manual discharge accumulated ON/OFF	Initial value: 0; range: 0-1 (0: OFF; 1: ON)
0219	40220	Manual discharge bag locked adjustment ON/OFF	Initial value: 0; range: 0-1 (0: OFF; 1: ON)
0220	40221	Discharge real-time detection ON/OFF	Initial value: 0; range: 0-1 (0: OFF; 1: ON)
0221	40222	Gross/Net weight packaging mode (no hopper)	Initial value: 1 (NW) 0: Gross weight packaging mode-no hopper(filling after bag locked) 1: Net weight packaging mode-no hopper(stable and tare after bag locked, then enter filling)

0222	40223	Dynamic filter ON/OFF	Initial value: 1; range: 0-1 (0: OFF; 1: ON) Parameters are valid when set ON.
0223	40224	Filling filter parameters	Initial value: 4, range: 1~9
0224	40225	Value filter parameters	Initial value: 7, range: 1~9
0225	40226	Discharge filter parameters	Initial value: 3, range: 1~9
0226	40227	Adaptive Level	Initial value: 3, range: 1~5
0227	40228	Adaptive ON/OFF	Initial value ： 0； range：0~2 Optional 0：OFF；1: 2-Speed Fill ； 2: 3-Speed Fill
0228~0229	40229~40230	**Reserve**	
Maintenance parameters - structure			
0230	40231	Scale structure	Initial value: 0 0: with hopper, 1: no hopper
0231	40232	Working mode	Initial value: 0 0: Dual AB with hopper 1: scale A with hopper, 2: scale B with hopper, 3: Dual hopper dula clip bag AB seprate 4: Dual hopper dula clip bag AB comb 5: AB seprate no hopper 6: AB comb no hopper 7: Bulk single hopper A 8: Bulk single hopper B, 9: Bulk scale AB independent 10: Bulk scale AB Interlock; with hopper write 0-4, no hopper write 5-6，bulk scale write 7-10
0232	40233	Scale A & Scale B target value setting separately	Initial value: OFF. OFF: same target value ON: different target value
0233	40234	Filling mode	Initial value: 1 0: Single Ctrl ; 1:Combo Ctrl
0234	40235	Dual scale bag unlocked mode (no hopper)	Initial value :: 0 0: closed; 1: bag unlocked simultaneously normal mode 2. bag unlocked simultaneously fast mode
0235-0236	40236-40237	Hopper Capacity	The written range of weight values:≤ maximum range
0237~0240	40238~40241	**Reserve**	
0241	40242	Manual Unlock Bag	Initial value :0; range：0：OFF；1:ON
0242	40243	Disable Unlock Bag When Running	Initial value :0; range:0：OFF；1:ON
0243	**40244**	Master DISC Lock Switch	Initial value :0; range:0:OFF；1:ON
0244	**40245**	Run Zero Nums	Initial value :**0** ;range:**0～9.**
0245	**40246**	Delay Before Zero	Initial value :**0s**,range:**0.0～9.9s.**
0246~0249	**Reserve**		
Peripheral parameters-patting bag parameters(1)			
0250	40251	Patting bag mode	Initial value: 0. With hopper: 0/2. No hopper: 0/1/2/3. When multiple scales in bucket mode are turned on, select 0/1/2. 0: Closed. 1: Patting bag When filling. 2: Patting bag When Hold

			3: All time
0251	40252	Patting times (filling)	Initial value: 0, range: 00-99
0252	40253	Patting times (Hold)	Initial value: 4, range: 00-99
0253	40254	Patting PreDelay Timer	Initial value: 0.5s. Range: 0.0 -99.9s
0254	40255	Patting ON Timer	Initial value: 0.5s. Range: 0.0 to 99.9s. Pat bag output effective time in the meantime.
0255	40256	Patting OFF Timer	Initial value: 0.5s. Range: 0.0 to 99.9s. Pat bag output ineffective time in the meantime.
0256	40257	Extra Patting timer	Initial: 0.0, range: 0.0 to 99.9s
0257-0258	40258-40259	Starte-Up weight	Weight value written range:≤maximum capacity
Peripheral parameters - coding parameter (2)			
0259	40260	Code ON/OFF	Initial value: 0; range: 0-1 (0: OFF; 1: ON)
0260	40261	Coding start delay timer	Initial value: 0.5s, range: 0.0 to 99.9s
0261	40262	Coding timer	Initial value: 0.5s, range: 0.0 to 99.9 s
0262	40263	Disable Fill/Discharge When Coding	Initial value: 0 **0**: Allow to enter discharging output or filling output in coding. **1**: Not allow to enter discharging output or filling output in coding.
Peripheral parameters — Hopper dual clampers, None-Hopper mode convoyer parameter（3）			
0263	40264	Conveyor ON/OFF	Initial value :0; range：0:OFF；1:ON
0264	40265	Conveyor 1 start delay timer	Initial value:0.5s,range :0-99.9
0265	40266	Conveyor 1 running timer	Initial value:4.0s,range :0-99.9
0266	40267	Scale B Traffic avoid delay (None hopper)	Initial value:2.0s,range: 0-9.9
Communication parameters-print parameters (4)			
0267	40268	Auto print ON/OFF	Initial value: 0. 1: ON, 0: OFF
0268	40269	Print format	Initial value: 0;Range: 0: 24 lines 1: 32 lines
0269	40270	Print language	Initial value: 0.1: English: 0: Chinese
0270	40271	Print Empty Line Nos	Initial value: 3, 0-9
Peripherals Parameter—sewing parameter (5)			
0271	40272	sewing start delay timer	0.0~99.9s; default：0.5
0272	40273	sewing on timer	0.0~99.9s; default：0.5
0273	40274	cutter on timer	0.0~99.9s; default：0.5
0274	40275	Sewing stop delay timer	0.0~99.9s; default：0.5
Peripherals Parameter—discharge shaking parameter (6)			
0275	40276	discharge shaking ON/OFF	0:OFF; 1:individual shaking,2:DISC shaking ;default：0
0276	40277	discharge on timer	0.0~9.9, default 2.0s
0277	40278	discharge shaking on timer	0.0~9.9, default 0.5s
0278	40279	discharge shaking off timer	0.0~9.9, default 0.5s
0279	40280	discharge shaking times	0~99，default 10
Peripherals Parameter—Filling/Discharge Overtime ON/OFF (7)			
0280	40281	Filling/Discharge Monitor	0 ~1; default 0
0281	40282	A:Coarse Flow Overtime	0.0~99.9s; default 5.0s
0282	40283	A:Medium Flow Overtime	0.0~99.9s; default 5.0s
0283	40284	A:Manual Fine Overtime	0.0~99.9s; default 5.0s
0284	40285	A:Discharge Overtime	0.0~99.9s; default 5.0s
0285	40286	B:Coarse Flow Overtime	0.0~99.9s default 5.0s
0286	40287	B:Medium Flow Overtime	0.0~99.9s; default 5.0s
0287	40288	B:Manual Fine Overtime	0.0~99.9s; default 5.0s
0288	40289	B:Discharge Overtime	0.0~99.9s; default 5.0s
0289	40290	Cutter Start Delay Timer	0.0~99.9s; default 0.5s
0290	40291	Sewing ON/OFF	Initial value:0，1:ON, 0:OFF

0291	40292	Sewing ddelay timer	Initial value:0.3，0~99.9s
0292	**40293**	Tractor ON.OFF	Initial value:0；0:OFF，1:ON
0293	**40294**	Fill timeout hanle	Initial value:2；range:0~2; 0:Only Alarm,1:Alarm and Stop; 2:Alarm and finish fill
0294-0295	**40295-40296**	Fill timeout lower limit	Initial value:0；range:0 ~full capacity
0296	**40297**	DISC timeout handle	Initial value:2；range:0~2; 0:Only Alarm,1:Alarm and Stop; 2:Alarm and finish fil;
0297	**40298**	Conveyor 2&3 Max Run Time	Initial value:30.0; range:0-99.9s
0298~0299	40299~40300	**Reserve**	
Communication parameters - serial port1 parameters (1)			
0300	40301	Slave COM ID	Scale number. Initial value：1; range:1-99.
0301	40302	Protocol	Initial value：Modbus-RTU 0：Modbus-RTU;1：Print; 2：Continuous Send 3：Re-ContA; 4：Re-ContB
0302	40303	Baud rate	Range：0: 9600；1: 19200；2: 38400；3: 57600；4:115200；Default：2（38400）
0303	40304	Data format	Range 0: 8-E-1；1: 8-N-1；2: 7-E-1；3: 7-N-1） Default :0（8-E-1）
0304	40305	Dword Fomat	**MODBUS** double word register storing order. Range: 0-1 (0: AB-CD; 1: CD-AB) Default: 0 (AB-CD)
Communication parameters – serial port 2 parameters (2)			
0305	40306	ID	Scale number. Initial value：1; range:1-99.
0306	40307	Protocol	Initial value：Modbus-RTU 0：Modbus-RTU; 1:Print; 2:Continuous Send; 3：Re-ContA; 4：Re-ContB
0307	40308	Baud rate	range：0: 9600；1: 19200；2: 38400；3: 57600；4:115200 default：2（38400）
0308	40309	Data format	Range：0: 8-E-1；1: 8-N-1；2: 7-E-1；3: 7-N-1） Default: 0（8-E-1）
0309	40310	Dword Fomat	**MODBUS** double word register storing order. Range: 0-1 (0: AB-CD; 1: CD-AB) Default: 0 (AB-CD)
Cumulative print			
0310	40311	Print accumulated	Read 0.；Write 1, print accumulated.
0311	40312	Print recipe accumulated	Read 0. Write 0: print present recipe accumulated Write 1-40 print the corresponding accumulated recipes Write 41, print all accumulated recipes
0312	40313	Print user accumulated	Read 0. Write 100, print current user accumulated. Write 0-9, print corresponding user accumulated. Write 101, print all user accumulated.
0313-0319	**Reserve**		
Reset			
0320	40321	Reset	**8800**All parameters restore factory settings **8801**Calibration recovery **8802**Recovery weighing parameters **8803**Recovery formula **8804**IO definition of recovery **8805**Perform backups **8806**Implementation of recovery Read returns 0
I/O Module test Parameter			
0321	40322	Start/Stop I/O test	Write 1 Start I/O module test Write 0 ESC I/O module test state,stop state can write in Read：Return current I/O module test ON/OFF's state

0322	40323	Input I/O module test	Write: not allowed. Read: IN1~12 matches with Lo-Hi. 1: valid input, 0: invalid input.
0323-0324	40324-40325	Output I/O module test	Write: OUT1~16 matches with Lo-Hi, could be written when set ON. 1: valid output, 0: invalid output. Read: return to I/O module state, OUT1~16 matches with Lo-Hi. 1: valid output, 0: invalid output.
0325-0349	Reserve		
I/O Module user-defined Parameters			
0350	40351	Input port 1 is defined.	Write: Write function corresponding to the value. If defined IN as running, user has to write 1 in according register of IN. Read: Returns to I/O module state. (Refer to the definition of switch quantity in Section 4.8 for the meaning of function code)
0351	40352	Input port 2 is defined.	
0352	40353	Input port 3 is defined.	
0353	40354	Input port 4 is defined.	
0354	40355	Input port 5 is defined.	
0355	40356	Input port 6 is defined.	
0356	40357	Input port 7 is defined.	
0357	40358	Input port 8 is defined.	
0358	40359	Input port 9 is defined.	
0359	40360	Input port 10 is defined.	
0360	40361	Input port 11 is defined.	
0361	40362	Input port 12 is defined.	
0362	40363	Output port 1 is defined.	Write: Write function corresponding to the value. If defined OUT as running, user has to write 1 in according register of OUT. Read: Returns to I/O module state. (Refer to the definition of switch quantity in Section 4.8 for the meaning of function code)
0363	40364	Output port 2 is defined.	
0364	40365	Output port 3 is defined.	
0365	40366	Output port 4 is defined.	
0366	40367	Output port 5 is defined.	
0367	40368	Output port 6 is defined.	
0368	40369	Output port 7 is defined.	
0369	40370	Output port 8 is defined.	
0370	40371	Output port 9 is defined.	
0371	40372	Output port 10 is defined.	
0372	40373	Output port 11 is defined.	
0373	40374	Output port 12 is defined.	
0374	40375	Output port 13 is defined.	
0375	40376	Output port 14 is defined.	
0376	40377	Output port 15 is defined.	
0377	40378	Output port 16 is defined.	
0378-0399	**Reserve**		
Target value of **40** recipes parameters (read and write)			
0400-0401	40401-40402	Target value of recipe 1	Initial value: 0
0402-0403	40403-40404	Target value of recipe 2	Initial value: 0
0404-0405	40405-40406	Target value of recipe 3	Initial value: 0
0406-0407	40407-40408	Target value of recipe 4	Initial value: 0
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0478-0479	40479-40480	Target value of recipe 40	Initial value: 0
0480-0499	**Reserve**		
Scale A target value parameters of 40 recipes (read and write)			
0500-0501	40501-40502	Target value of recipe 1A	Initial value: 0 (Read only)
0502-0503	40503-40504	Target value of recipe 2A	Initial value: 0
0504-0505	40505-40506	Target value of recipe 3A	Initial value: 0
0506-0507	40507-40508	Target value of recipe 4A	Initial value: 0
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0578-0579	40579-40580	Target value of recipe 40A	Initial value: 0
0580-0599	**Reserve**		
Scale B target value parameters of 40 recipes (read and write)			
0600-0601	40601-40602	Target value of recipe 1B	Initial value: 0

0602-0603	40603-40604	Target value of recipe 2B	Initial value: 0
0604-0605	40605-40606	Target value of recipe 3B	Initial value: 0
0606-0607	40607-40608	Target value of recipe 4B	Initial value: 0
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0678-0679	40679-40680	Target value of recipe 40B	Initial value: 0
0680-0699	**Reserve**		
Accumulated weight parameters of 40 recipes.			
0700-0701	40701-40702	Accumulated weight of recipe 1	
0702-0703	40703-40704	Accumulated weight of recipe 2	
0704-0705	40705-40706	Accumulated weight of recipe 3	
0706-0707	40707-40708	Accumulated weight of recipe 4	
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0778-0779	40779-40780	Accumulated weight of recipe 40	
0780-0799	**Reserve**		
Accumulated bags parameters of 40 recipes.			
0800-0801	40801-40802	Accumulated bags of recipe 1(Written 0 to clear accumulated weight and bags of the recipe.)	
0802-0803	40803-40804	Accumulated bags of recipe 2(Written 0 to clear accumulated weight and bags of the recipe.)	
0804-0805	40805-40806	Accumulated bags of recipe 3(Written 0 to clear accumulated weight and bags of the recipe.)	
0806-0807	40807-40808	Accumulated bags of recipe 4(Written 0 to clear accumulated weight and bags of the recipe.)	
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0878-0879	40879-40880	Accumulated bags of recipe 40(Written 0 to clear accumulated weight and bags of the recipe.)	
0880-0899	**Reserve**		
10 users cumulative weight			
0900-0901	40901-40902	User 0 accumulated weight (Written 0 to clear accumulated weight and bags of the user.)	
0902-0903	40903-40904	User 1 accumulated weight (Written 0 to clear accumulated weight and bags of the user.)	
0904-0905	40905-40906	User 2 accumulated weight (Written 0 to clear accumulated weight and bags of the user.)	
0906-0907	40907-40908	User 3 accumulated weight (Written 0 to clear accumulated weight and bags of the user.)	
0908-0909	40909-40910	User 4 accumulated weight (Written 0 to clear accumulated weight and bags of the user.)	
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0918-0919	40919-40920	User 9 accumulated weight (Written 0 to clear accumulated weight and bags of the user.)	
0920-0949	**Reserve**		
10 users cumulative number of times			
0950-0951	40951-40952	User accumulated times 0 (Written 0 to clear accumulated weight and bags of the user.)	
0952-0953	40953-40954	User accumulated times 1 (Written 0 to clear accumulated weight and bags of the user.)	
0954-0955	40955-40956	User accumulated times 2 (Written 0 to clear accumulated weight and bags of the user.)	
○○○○		○○○○○○○○○○	
0968-0969	40969-40970	User accumulated times 9 (Written 0 to clear accumulated weight and bags of the user.)	
0970-0999	40971-41000	Reserve	
Motor Parameters			
1000	41001	Filling mode：0：air drived(default)；1：Step Motor；2:Motor	
1001	41002	Motor group：0（default）；range：0-4 optional	
1002	41003	Filling stepper motor frequency of scale A	Range:1-50000；initial value：12000Hz

1003-1004	41004-41005	A filling close to Motor Steps For Fi-Flow	Range：1-60000；initial value：1800
1005-1006	41006-41007	A filling close to Motor Steps For Me -Flow	Range：1-60000；initial value：4300
1007-1008	41008-41009	A filling close to Motor Steps For Co -Flow	Range：1-60000；initial value：7750
1009	41010	The motor rotation direction signal of scale A fill gate	Range:0:OFF:Gate Open Direction;1: ON:Gate Open Direction,；initial value:0
1010	41011	Filling stepper motor frequency of scale B	Range:1-50000；initial value：12000Hz
1011-1012	41012-41013	B filling close to Motor Steps For Fi-Flow	Range：1-60000；initial value：1800
1013-1014	41014-41015	B filling close to Motor Steps For Me -Flow	Range：1-60000；initial value：4300
1015-1016	41016-41017	B filling close to Motor Steps For Co -Flow	Range：1-60000；initial value：7750
1017	41018	The motor rotation direction signal of scale B fill gate	Range:0:OFF:Gate Open Direction;1: ON:Gate Open Direction,；initial value:0
1018	41019	Scale A filling motor start frequency	Range:1-50000；initial value：2000Hz
1019	41020	Scale A filling motor acceleration time	Range:**0~9999(ms)**；initial value:**200ms**
1020	41021	Scale A filling motor deceleration time	Range:**0~9999(ms)**；initial value：**50ms**
1021	41022	Scale B filling motor start frequency	Range:**1-50000Hz**；initial value：**2000Hz**
1022	41023	Scale B filling motor acceleration time	Range:**0~9999(ms)**；initial value:200ms
1023	41024	Scale B filling motor deceleration time	Range:**0~9999(ms)**；initial value:**50ms**
1024	41025	The running time of scale A filling gate opens to Coarse Flow.（ Normal motors）	Range:**0~99.9(s)**；initial value：**0.8s**
1025	41026	The running time of scale A filling gate opens to Medium Flow.	Range:**0~99.9(s)**；initial value：**0.4s**
1026	41027	The running time of scale A filling gate opens to Fine Flow.	Range:**0~99.9(s)**；initial value：**0.2s**
1027	41028	The running time of scale B filling gate opens to Coarse Flow.	Range:**0~9999(ms)**；initial value：**50ms**
1028	41029	The running time of scale B filling gate opens to Medium Flow.	Range:**0~99.9(s)**；initial value：**0.8s**
1029	41030	The running time of scale B filling gate opens to Fine Flow.	Range:**0~99.9(s)**；initial value：**0.4s**
1030	41031	Filling gate closed timeout	Range:**0~99.9(s)**；initial value：**0.2s**
1031	41032	Motor filling gate opened anti logically	
1032	41033	Bag locked mode	**0:**Air Drived**;1**:Step Motor;**2**:Normal Motor(Two Pos. Signal)；**3**: Normal Motor(One Pos. Signal)；
1033	41034	Bag locked frequency of scale A（ Stepper motor ）	Range:**1-50000Hz**； initial value:**30000Hz**
1034	41035	Bag unlocked frequency of scale A	Range:**1-50000Hz**； initial value：**20000Hz**
1035-1036	41036-41037	Pulses quantity required that state of bag unlocked state turns to bag locked state of scale A motor	Range:**1~60000;** initial value：**12000**
1037	41038	The motor rotation direction signal of scale A bag locked	nitial value：**0**；Optional：**0:** OFF:If Clamper Open Direction：**1:** ON:If

			Clamper Open Direction：8
1038	41039	Motor frequency of scale B bag locked	Range:**1-50000Hz**； initial value：**30000Hz**
1039	41040	Motor frequency scale B bag unlocked	Range:**1-50000Hz**； initial value：**20000Hz**
1040-1041	41041-41042	Pulses quantity required that state of bag unlocked turns to bag locked of scale B motor	Range:**1~60000;** initial value：**12000**
1042	41043	The motor rotation direction signal of scale B bag locked	Initial value：**0**；Optional：**0:** OFF:If Clamper Open Direction： **1:** ON:If Clamper Open Direction：
1043	41044	Scale A bag locked motor start frequency	Range:**1-50000Hz**； initial value：**2000Hz**
1044	41045	Scale A bag locked motor acceleration time	Range:**0~9999(ms)**； initial value：**200ms**
1045	41046	Scale A bag locked motor deceleration time	Range:**0~9999(ms)**； initial value：**50ms**
1046	41047	Scale B bag locked motor start frequency	Range:**1-50000Hz**； initial value：**2000Hz**
1047	41048	Scale B bag locked motor acceleration time	Range:**0~9999(ms)**； initial value：**200ms**
1048	41049	Scale B bag locked motor deceleration time	Range:**0~9999(ms)**； initial value：**50ms**
1049	41050	Bag unlocked time （ Normal motor）	Range:**0~99.9(s)**； initial value：**0.5s**
1050	41051	Bag unlocked timeout	Range:**0~99.9(s)**； initial value：**3.0s**
1051	41052	Bag locked timeout	Range:**0~99.9(s)**； initial value：**3.0s**
1052	41053	Clamper position signal type	Initial value：0；Optional：**0**：ON:If Closed；**1:**OFF:If Closed；
1053	41054	Discharge mode	**0**：Air Dived；**1**：Step Motor；2：Normal Motor(One Pos. Signal)；3: Normal Motor(Two Pos. Signal)；4:Normal Motor Rotating
1054	41055	Scale A discharge gate opened motor frequency	Range:**1-50000Hz**; initial value：**30000Hz**
1055	41056	Scale A discharge gate closed motor frequency	Range:**1-50000Hz**; initial value：**20000Hz**
1056-1057	41057-41058	Pulses quantity required that state of closed turns to opened of scale A motor	Range:**1~60000;** initial value：**12000**
1058	41059	The signal of motor rotation direction of scale A discharge gate opened	initial value：0；Optional：**0**：ON:If Closed；**1:**OFF:If Closed；
1059	41060	The motor frequency of scale B discharge gate opened	Range:**1-50000Hz**； initial value：**30000Hz**
1060	41061	The motor frequency of scale B discharge gate closed	Range:：**1-50000Hz**； initial value：**20000Hz**
1061-1062	41062-41063	Pulses quantity required that state of closed turns to opened of scale B motor	Range:**1~60000;** initial value：**12000**
1063	41064	The signal of motor rotation direction of scale B discharge gate opened	Initial value：0； Optional：**0**：ON:If Closed；**1:**OFF:If Closed；
1064	41065	Scale A discharge motor started frequency	Range:**1-50000Hz**； initial value：**2000Hz**
1065	41066	Scale A discharge motor acceleration time	Range:**0~9999(ms)**； initial value：**200ms**
1066	41067	Scale A discharge motor deceleration time	Range:**0~9999(ms)**； initial value：**50ms**
1067	41068	Scale B discharge motor started	Range:**1-50000Hz**； initial value：

		frequency	**2000Hz**
1068	41069	Scale B discharge motor acceler-ation time	Range:**0~9999(ms)**；initial value：**200ms**
1069	41070	Scale B discharge motor deceler-ation time	Range:**0~9999(ms)**；initial value：**50ms**
1070	41071	Scale A discharge motor gate opened signal output time（ Normal motors）	Range:**0.0~99.9(s)**；initial value：**1.0s**
1071	41072	Scale B discharge motor gate opened signal output time	Range:**0.0~99.9(s)**；initial value：**1.0s**
1072	41073	Discharge gate closed timeout	Range:**0.0~99.9(s)**；initial value：**3.0s**
1073	41074	Discharge gate opened timeout	Range:**0.0~99.9**(s)；initial value：**3.0s**
1074	41075	Motor discharge ON/OFF anti logically	
1075	41076	Discharge limit digit real-time detection ON/OFF	Range:**OFF**，**ON**, initial value：OFF
1076	41077	Motor group no. of present rec-ipe	Initial value：**0;**Range:**0~4**
Peripherals Parameter—Auxiliary Pulse Parameter (8)			
1079	41080	Auxiliary Pulse ON/OFF	Initial value：0，1：ON 0：OFF
1080	41081	Auxiliary Pulse 1 Execute Total Timer	0.0~999.9s default 0(If it's 0, it keeps op-erating)
1081	41082	Auxiliary Pulse 1 On Timer	0.0~999.9s default 10.0s
1082	41083	Auxiliary Pulse 1 Off Timer	0.0~999.9s default 10.0s
1083	41084	Auxiliary Pulse 2 Execute Total Timer	0.0~999.9 s default 0(If it's 0, it keeps op-erating)
1084	41085	Auxiliary Pulse 2 On Timer	0.0~999.9s default 10.0s
1085	41086	Auxiliary Pulse 2 Off Timer	0.0~999.9s default 10.0s
1086	41087	Auxiliary Pulse 3 Execute Total Timer	0.0~999.9 min default 0(If it's 0, it keeps operating)
1087	41088	Auxiliary Pulse 3 On Timer	0.0~999.9 min default 10.0 min
1088	41089	Auxiliary Pulse 3 Off Timer	0.0~999.9 min default 10.0 min
1089	41090	Auxiliary Pulse 4 Execute Total Timer	0.0~999.9 min default 0(If it's 0, it keeps operating)
1090	41091	Auxiliary Pulse 4 On Timer	0.0~999.9 min default 10.0 min
1091	41092	Auxiliary Pulse 4 Off Timer	0.0~999.9 min default 10.0 min
Ethernet port parameter			
1100	41101	Dword Format	Initial value 0. range：0：AB-CD（Hi ahead）; 1：CD-AB（Lo ahead）
1101	41102	Socket	Initial value ： 502. range 1~65535
1102~1105	41103~41106	IP1~IP4	Initial value:192.168.101.246,range **0.0.0.0~255.255.255.255**
1106~1111	41107~41112	MAC Address	MAC1~ MAC6，Only read
User Logic Program 1			
1150	41151	User Logic Type	**Initial Value:0; range 0~5** **0: OFF** **1: Delay Connect** **2: Delay disconnect** **3: Delay connect and delay disconnect** **4: invalid-valid trigger** **5: valid-invalid trigger**
1151	41152	Trigger Type	Initial value：**0**；range：**0~64** Optional customization trigger input, fix I/O Module input **1~12**, I/O Module output define, weight value trigger
1152	41153	Trigger Function Input	Initial value：**0**；range：**0~12** Select the signal corresponding to the I/O Module input port 0~12, input port-0 stands for do not define this function.

1153	41154	Trigger Function Output	Initial value：**0**；range：**0~16** Select the signal corresponding to the I/O Module input port 0~16, input port-0 stands for do not define this function.
1154	41155	Delay ON Time	Initial value：**0**；range：**0~99.9s**
1155	41156	Delay OFF Time	Initial value：**0**；range：**0~99.9s**
1156	41157	Output ON Timer	Initial value：**0**；range：**0~99.9s**
1157-1158	41158~41159	Logic Trigger Weight	Initial value：0； range：0~full capacity
1159~1169	41160~41170	**Reserve**	
User Logic Program 2			
1170	41171	User Logic Type	**Initial Value:0; range 0~5** **0: OFF** **1: Delay Connect** **2: Delay disconnect** **3: Delay connect and delay disconnect** **4: invalid-valid trigger** **5: valid-invalid trigger**
1171	41172	Trigger Type	Initial value：**0**；range：**0~64** Optional customization trigger input, fix I/O Module input **1~12**, I/O Module output define, weight value trigger
1172	41173	Trigger Function Input	Initial value：**0**；range：**0~12** Select the signal corresponding to the I/O Module input port 0~12, input port-0 stands for do not define this function.
1173	41174	Trigger Function Output	Initial value：**0**；range：**0~16** Select the signal corresponding to the I/O Module input port 0~16, input port-0 stands for do not define this function.
1174	41175	Delay ON Time	Initial value:**0;** range：**0~99.9s**
1175	41176	Delay OFF Time	Initial value:**0;** range：**0~99.9s**
1176	41177	Output ON Timer	Initial value:**0;** range：**0~99.9s**
1177-1178	41178~41179	Logic Trigger Weight	Initial value:**0;** range：0~full capacity
1179~1189	41180~41190	Reserve	
User Logic Program 3			
1190	41191	User Logic Type	**Initial Value:0; range 0~5** **0: OFF** **1: Delay Connect** **2: Delay disconnect** **3: Delay connect and delay disconnect** **4: invalid-valid trigger** **5: valid-invalid trigger**
1191	41192	Trigger Type	Initial value：**0**；range：**0~64** Optional customization trigger input, fix I/O Module input **1~12**, I/O Module output define, weight value trigger
1192	41193	Trigger Function Input	Initial value：**0**；range：**0~12** Select the signal corresponding to the I/O Module input port 0~12, input port-0 stands for do not define this function.
1193	41194	Trigger Function Output	Initial value：**0**；range：**0~16** Select the signal corresponding to the I/O Module input port 0~16, input port-0 stands for do not define this function.
1194	41195	Delay ON Time	Initial value：**0**；range：**0~99.9s**
1195	41196	Delay OFF Time	Initial value：**0**；range：**0~99.9s**
1196	41197	Output ON Timer	Initial value：**0**；range：**0~99.9s**
1197-1198	41198~41199	Logic Trigger Weight	Initial value: 0; range：0~full capacity

1199~1209	41200~41210	Reserve	
User Logic Program 4			
1210	41211	User Logic Type	**Initial Value:0; range 0~5** **0: OFF** **1: Delay Connect** **2: Delay disconnect** **3: Delay connect and delay disconnect** **4: invalid-valid trigger** **5: valid-invalid trigger**
1211	41212	Trigger Type	Initial value：**0**；range：**0~64** Optional customization trigger input, fix I/O Module input **1~12**, I/O Module output define, weight value trigger
1212	41213	Trigger Function Input	Initial value：**0**；range：**0~12** Select the signal corresponding to the I/O Module input port 0~12, input port-0 stands for do not define this function.
1213	41214	Trigger Function Output	Initial value：**0**；range：**0~16** Select the signal corresponding to the I/O Module input port 0~16, input port-0 stands for do not define this function.
1214	41215	Delay ON Time	Initial value：**0**；range：**0~99.9s**
1215	41216	Delay OFF Time	Initial value：**0**；range：**0~99.9s**
1216	41217	Output ON Timer	Initial value：**0**；range：**0~99.9s**
1217-1218	41218~41219	Logic Trigger Weight	Initial value: 0; range：0~full capacity
1219~1229	41220~41230	**Reserve**	
User Logic Program 5			
1230	**41231**	User Logic Type	**Initial Value:0; range 0~5** **0: OFF** **1: Delay Connect** **2: Delay disconnect** **3: Delay connect and delay disconnect** **4: invalid-valid trigger** **5: valid-invalid trigger**
1231	41232	Trigger Type	Initial value：**0**；range：**0~64** Optional customization trigger input, fix I/O Module input **1~12**, I/O Module output define, weight value trigger
1232	41233	Trigger Function Input	Initial value：**0**；range：**0~12** Select the signal corresponding to the I/O Module input port 0~12, input port-0 stands for do not define this function.
1233	41234	Trigger Function Output	Initial value：**0**；range：**0~16** Select the signal corresponding to the I/O Module input port 0~16, input port-0 stands for do not define this function.
1234	41235	Delay ON Time	Initial value：**0**；range：**0~99.9s**
1235	41236	Delay OFF Time	Initial value：**0**；range：**0~99.9s**
1236	41237	Output ON Timer	Initial value：**0**；range：**0~99.9s**
1237-1238	41238~41239	Logic Trigger Weight	Initial value: 0; range：0~full capacity
1239~1249	41240~41250	**Reserve**	
User Logic Program 6			
1250	41251	User Logic Type	**Initial Value:0; range 0~5** **0: OFF** **1: Delay Connect** **2: Delay disconnect** **3: Delay connect and delay disconnect** **4: invalid-valid trigger** **5: valid-invalid trigger**

1251	41252	Trigger Type	Initial value：**0**；range：**0~64** Optional customization trigger input, fix I/O Module input **1~12**, I/O Module output define, weight value trigger
1252	41253	Trigger Function Input	Initial value：**0**；range：**0~12** Select the signal corresponding to the I/O Module input port 0~12, input port-0 stands for do not define this function.
1253	41254	Trigger Function Output	Initial value：**0**；range：**0~16** Select the signal corresponding to the I/O Module input port 0~16, input port-0 stands for do not define this function.
1254	41255	Delay ON Time	Initial value:**0;** range：**0~99.9s**
1255	41256	Delay OFF Time	Initial value:**0;** range：**0~99.9s**
1256	41257	Output ON Timer	Initial value:**0;** range：**0~99.9s**
1257-1258	41258~41259	Logic Trigger Weight	Initial value:**0;** range：0~full capacity
1259~1299	41260~41300	**Reserve**	
1300	41301	A feeding motor returns to zero frequency（Initial value:2000；range：1~50000）	
1301	41302	B feeding motor returns to zero frequency（Initial value:2000；range:1~50000）	
1302	41303	A Clamper motor returns to zero frequency（Initial value:2000；range:1~50000）	
1303	41304	B Clamper motor returns to zero frequency（Initial value:2000；range:1~50000）	
1304	41305	A DICS motor returns to zero frequency（Initial value:2000；range:1~50000）	
1305	41306	B DICS motor returns to zero frequency（Initial value:2000；range:1~50000）	
1306	**41307**	No position signal for fill gate	Range:**OFF**, **ON**, Initial value: OFF
1307	**41308**	No position signal for clamper	Range:**OFF**, **ON**, Initial value: OFF
1308	**41309**	No position signal for DISC gate	Range:**OFF**, **ON**, Initial value: OFF
1309-1310	**1310-1311**	Scale A filler:Motor steps for closed	Range:1~60000； Initial value：100；
1311-1312	**1312-1313**	Scale B filler:Motor steps for closed	Range:1~60000； Initial value：100；
1313-1314	**1314-1315**	Scale A clamper: Steps for clamper open	Range:1~60000； Initial value：100；
1315-1316	**1316-1317**	Scale B filler: Steps for clamper open	Range:1~60000； Initial value：100；
1317-1318	**1318-1319**	Scale A DISC: Discharge Steps for closed	Range:1~60000； Initial value：100；
1319-1320	**1320-1321**	Scale B DISC: Discharge Steps for closed	Range:1~60000； Initial value：100；
1321~1999	**41322~42000**	Reserve	
Statistic Parameters			
2000-2001	**42001-42002**	Total cumulative weight is **6** digits	
2002-2003	**42003-42004**	The total cumulative weight low **9**	
2004-2005	**42005-42006**	Total accumulative times	
2006-2007	**42007-42008**	the current formula accumulation is **6** digits higher	
2008-2009	**42009-42010**	the current formula accumulation is **9** digits lower	
2010-2011	**42011-42012**	Accumulative number of current formulation	
2012-2013	**42013-42014**	the accumulations of current users is **6** digits higher	
2014-2015	**42015-42016**	the accumulations of current users is **9** digits lower	
2016-2017	**42017-42018**	Total number of current user counts	
2018-2019	**42019-42020**	Formula **1** cumulative weight is **6** digits high	
2020-2021	**42021-42022**	Formulation **1**cumulative weight low **9**	
2022-2023	**42023-42024**	Formula **1** cumulative count	
····· （**Read the formula cumulative value sequentially**）			

2252-2253	**42253-42254**	Formulation **6** High **40** cumulative weight	
2254-2255	**42255-42256**	Formulation **40** cumulative weight low **9**	
2256-2257	**42257-42258**	Formula **40** cumulative times	
2258-2259	**42259-42260**	User **1** cumulative weight is **6** digits high	
2260-2261	**42261-42262**	User **1**cumulative weight is **9** digits lower	
2262-2263	**42263-42264**	User **1** cumulative times	
……（**Read the accumulated user values in sequence**）			
2312-2313	**42313-42314**	User **10** cumulative weight is **6** digits high	
2314-2315	**42315-42316**	User **10** cumulative weight is **9** digits lower	
2316-2317	**42317-42318**	User **10** cumulative times	
2318	**42319**	Clear All Recipes ACUM	Write **1** clear total accumulation
2319	**42320**	Clear recipe ACUM	Write **1-20 to** clear the Recipe ID ACUM; Write **100 to** Clear Choose Recipe ACUM; Write **101** to Clear All Recipe ACUM.
2320	**42321**	Clear user ACUM	Read as **0.** Write **0-9 to** clear the user ID ACUM ; Write **100 to** clear choose user ACUM ; Write **101** to clears all user ACUM.
2321~29999	**42322~43000**	Reserve	
3000-3001	**43001-43002**	Current flow	
3002	**43003**	Flow calculation window length	Range:1 ~ 6
3003	**43004**	Current flow unit	Read only: 0: g/h;1 kg/h.2: t/h;3: lb/h.
3004	**43005**	Current flow point	Read only: 0:0 bits;1:1 bits;2:2 bits;3:3 bits;Four to four.
3005-3006	**43006-43007**	Total quantity delivered Hi 6 bits	Range:**0~999999**
3007-3008	**43008-43009**	Total quantity delivered low 9 bits	Range:**0~999999999**
3009-3010	**43010-43011**	Cumulative times of receipt and delivery	Range:**0~999999999**
3011-3012	**43012-43013**	Cumulative weight of receipt and delivery Hi 6 bits	Range:**0~999999**
3013-3014	**43014-43015**	Cumulative weight of receipt and delivery low 9 bits	Range:**0~999999999**
3015-3016	**43016-43017**	Total cumulative times of the system	Range:**0~999999999**
3017-3018	**43018-43019**	Total cumulative weight of the system is Hi 6 bits	Range:**0~999999**
3019-3020	**43020-43021**	Permanent cumulative low 9 bits	Range:**0~999999999**
3021~3999	**43022-44000**	Reserve	

16-bit status message address (used to match touch screen)				
4000-4001	**44001-44002**	Scale A present weight	The weight of scale A on the controller is shown	
4002	**44003**	Scale A present weight state	**Bit**	**Instructions**
			D0	Unstable weight: 0. Stable: 1.
			D1	Non-zero:0. Zero: 1.
			D2	Symbol of present weight: +/- Positive: 0. Negative: 1.
			D3	Overflow
			D4	Positive overflow
			D5	Negative overflow
			D6	Load cell positive overflow
			D7	Load cell negative overflow
			D8	Stable millivolt: 1. Unstable: 0.
			D9~15	Reserve
4003	Reserve			

4004-4005	**44005-44006**	Scale B present weight	The weight of scale B on the controller is shown	
4006	**44007**	Scale B present weight state	Referring to Scale A present weight state	
4008	**44009**	Scale A & Scale B control state 1	D0	0: Stop. 1: Run.
			D1	Alarm
			D2	Batch completed
			D3	Bag locked
			D4	Upper level
			D5	Under Level
			D6	Filling material
			D7	Lack material
			D8	Patting bag
			D9	Conveyor output (Gross weigher)
			D10	Coding output
			D11	Sewing machine output
			D12	cutting machine output
			D13	Auxiliary pulse 1
			D14	Auxiliary pulse 2
			D15	Auxiliary pulse 3
4009	**44010**	Scale A & Scale B control state 2	D0	Auxiliary pulse 4
			D1	Relay output 1
			D2	Relay output 2
			D3	Relay output 3
			D4	Relay output 4
			D5	Relay output 5
			D6	Relay output 6
			D7	In the suspension
			D8	Hanger Up A
			D9	Hanger Up B
			D10	Last Feed
			D11-15	Reserve
4010	**44011**	Scale A control state 1	D0	Before scale A filling
			D1	Scale A Coarse Flow
			D2	Scale A Medium Flow
			D3	Scale A Fine Flow
			D4	Scale A value
			D5	Scale A discharge
			D6	Scale A zero zone
			D7	Scale A overlimit
			D8	Scale A underlimit
			D9	Scale A qualified
			D10	Scale A over/under pause
			D11	Scale A bag locked (no hopper)
			D12	Scale A patting bag
			D13	Scale A coding output
			D14	0:Gross weight, 1:Net weight
			D15	A: DISC Shaking
4011	**44012**	Scale A control state 2	D0	A:Weight OK
			D1	A:DISC Completed
			D2~15	Reserve
4012	**44013**	Scale B control state1	Referring to Scale A control state1	
4013	**44014**	Scale B control state2	Referring to Scale A control state2	
4014-4015	**44015-44016**	Total accumulated weight (0~999999999)		
4016-4017	**44017-44018**	Total accumulated bags (0~999999999)		

4018-4019	**44019-44020**	The current recipe cumulative weight (0~999999999)	
4020-4021	**44021-44022**	The current recipe cumulative bags (0~999999999)	
4022-4023	**44023-44024**	User accumulated weight (0~999999999)	
4024-4025	**44025-44026**	User cumulative bags (0~999999999)	
4026-4027	**44027-44028**	Scale A previous weight value	
4028-4029	**44029-44030**	Scale B previous weight value	
4030	**44031**	Scale A alarm information	0- No alarm 1- Unable to start for unreasonable recipe setting. 2- Unable to start as the maximum capacity of the hopper is 0. 3- Weight value exceeds zero range when zeroing; 4- Weighing value is unstable when zeroing. 5- Over/Under alarm. 6- The target value of single scale can not be set as 0 or the full capacity is too large. 7- The target value is bigger than maximum capacity value. 8- Weight value or load cell is overlimit when start. 9- Discharge gate is sepearated from limit digit. 10- Not bag locked.(Manual unloading judgment After the bag is opened, the manual unloading unclamped bag will indicate that there is no bag, and the unclamped bag will not indicate during operation) 11- Zeroing in the process of running. 12- Zeroing over range in the process of running. 13- Zeroing is not unstable in the process of running. 14- The motor parameters is unreasonable (normal motor) 15- Reserve
4031	**44032**	Scale B alarm information	
4032-4033	**44033-44034**	Normal alarm information	0- No alarm; 1- Batch completed; 2- Scale A Over/Under pause 3- Scale B Over/Under pause 4- Motor filling gate of scale A closed over time alarm 5- Motor filling gate of scale B closed over time alarm 6- Scale A bag locked over time alarm 7- Scale B bag locked over time alarm 8- Scale A bag unlocked over time alarm 9- Scale B bag unlocked over time alarm 10- Scale A discharge gate closed over time alarm 11- Scale B discharge gate closed over time alarm 12- Scale A discharge gate opened over time alarm 13- Scale B discharge gate opened over time alarm 14- Scale A fill gate not closed in place alarm. 15- Scale B fill gate not closed in place

			alarm. 16- Scale A discharge gate not closed in place alarm. 17- Scale B discharge gate not closed in place alarm. 18- The communication is abnormal of main board and addition board. 19- Scale A coarse filling overtime alarm 20- Scale B coarse filling overtime alarm 21- Scale A medium filling overtime alarm 22- Scale B medium filling overtime alarm 23- Scale A fine filling overtime alarm 24- Scale B fine filling overtime alarm 25- Scale A discharge overtime alarm. 26- Scale B discharge overtime alarm 27- Scale A discharge shaking over-time alarm 28- Scale B discharge shaking over-time alarm
4034	**44035**	Scale A & Scale B calibration alarm	1- No alarm 2- Maximum range is too small 3- Maximum range is too large 4- Zero voltage is too high 5- Zero voltage is too low 6- Unstable zero point 7- Gain voltage is too large 8- Gain voltage is too small 9- Scale platform is unstable 10- Weight value input is error 11- Resolution is low after calibration. 12- Manual Coarse Flow then Manual Discharge(material calibrate alarm) 13- Reserve
4035	**44036**	Scale A & Scale B control state 3	0- IN1(Read By COM) 1- IN2(Read By COM) 2- IN3(Read By COM) 3- IN4(Read By COM) 4- IN5(Read By COM) 5- Out1 Direct Control 6- Out2 Direct Control 7- Out3 Direct Control 8- Out4 Direct Control 9- Out5 Direct Control 10- Manual Completed 11- No Level Detection 12-15 Reserve

Compile information (front and back)			
9000-9001	49001-49002	Logic Version ID	For example: 010000
9002-9003	49003-49004	Compile Date	For example: 161201
9004-9005	49005-49006	Compile Time	For example: 130805
9006-9007	49007-49008	Additional version ID	For example: 100
9008-9011	49009~49012	Reserve	
The following is a read-write bits (reading function codes: 0x01, writing function code: 0x05)			
Coil ON/OFF of GM9907-LD controlling function			
0000	00001	PWR-ON Zero	Write 1 on, 0 is written off. Each switching state is read out
0001	00002	Vib-Filter	

0002	00003	Result Hold	
0003	00004	Manual DISC To ACUM ON/OFF	
0004	00005	Bag locked Required(Manual DISC)	
0005	00006	Gross/Net weight in gross weigher	
0006	00007	Dynamic Filter ON/OFF	
0007	00008	Individual target mode ON/OFF	
0008	00009	OVER/UNDER ON/OFF	
0009	00010	OVER/UNDER Pause	
0010	00011	Fill Compensation ON/OFF	
0011	00012	Free Fall Correction ON/OFF	
0012	00013	Coding ON/OFF	
0013	00014	Disable Fill/Discharge When Coding	
0014	00015	Conveyor ON/OFF	
0015	00016	Print ON/OFF	
0016	00017	A Adaptive Pause	
0017	00018	B Adaptive Pause	
0018	00019	Adaptive parameter permanent re-place ON /OFF	
0019	0020	Reserve	
0020	00021	Scale A zero	The address can write in 1 only, read out 0.
0021	00022	Scale A manual discharge	
0022	00023	Scale A manual Fine Flow	
0023	00024	Scale A bag locked/unlocked	
0024	00025	Scale A Manual Filling	
0025	00026	Scale A Manual Medium Filling	
0026	00027	A Hanger up	Write 1 ON，write 0 OFF read out is each ON/OFF state
0027	00028	B Hanger up	
0028-0029	Reserve		
0030	00031	Scale B zero	The address can write in 1 only, read out 0.
0031	00032	Scale B manual discharge	
0032	00033	Scale B manual Fine Flow	
0033	00034	Scale B bag locked/unlocked	
0034	00035	Scale B manual filling	
0035	00036	Scale B Manual Medium Filling	
0036-0039	0037-0040	Reserve	
0040	00041	Run	This address can be written only 1. Read as 0
0041	00042	Emergency stop	
0042	00043	Stop	
0043	00044	Change Recipes	
0044	00045	Clear alarm	
0045	00046	Clear present user accumulated	
0046	00047	Clear all users accumulated	
0047	00048	Clear present recipe accumulated	
0048	00049	Clear all recipes accumulated	
0049	00050	Clear accumulated total	
0050	00051	All reset	
0051	00052	Calibration reset	
0052	00053	Working parameters reset	
0053	00054	Recipe parameters reset	
0054	00055	Peripheral parameters reset	
0055	00056	I/O module parameters reset	
0056	00057	Execution parameter backup	
0057	00058	Restore backup parameters	
0058	00059	Delete backup parameters	The address can write in 1 to

			delete backup parameters. If reads out 1, means backup parameter is available. If reads out 0, means without backup parameters.
0059	00060	Motor parameters reset	This address can only write 1. Read to 0
0060	00061	Sewing Input	
0061	00062	Sewing Emergency Stop	
0062	00063	Auxiliary Pulse 1	
0063	00064	Auxiliary Pulse 2	
0064	00065	Auxiliary Pulse 3	
0065	00066	Auxiliary Pulse 4	
0066	00067	Auxiliary Logic parameter Reset	
0067	00068	Clear Current Recipe	
0069	**0070**	Clearing surplus materials	
0070	**0071**	No Level Detection	Write 1 to set the shielding to be valid, write 0 to set the shielding to be invalid. Read as material level shielding status
0071	**0072**	Manual Completed	Writing 1 is valid for manual completion and cannot write 0. Read as manual completion status
0072-0079	Reserve		
Controlling function coil IO test			
0080	00081	I/O module test ON/OFF: to enter I/O module test by writing 1, exit by writing 0. Not allow to write when running.	
0081	00082	Read out 1 when input port 1 is valid. If invalid, will read out 0.	Do not take effect during writing.
0082	00083	Read out 0 when input port 2 is valid. If invalid, will read out 0.	
0083	00084	Read out 1 when input port 3 is valid. If invalid, will read out 0.	
0084	00085	Read out 1 when input port 4 is valid. If invalid, will read out 0.	
0085	00086	Read out 1 when input port 5 is valid. If invalid, will read out 0.	
0086	00087	Read out 1 when input port 6 is valid. If invalid, will read out 0.	
0087	00088	Read out 1 when input port 7 is valid. If invalid, will read out 0.	
0088	00089	Read out 1 when input port 8 is valid. If invalid, will read out 0.	
0089	00090	Read out 1 when input port 9 is valid. If invalid, will read out 0.	
0090	00091	Read out 1 when input port 10 is valid. If invalid, will read out 0.	
0091	00092	Read out 1 when input port 11 is valid. If invalid, will read out 0.	
0092	00093	Read out 1 when input port 12 is valid. If invalid, will read out 0.	
0093	00094	Read out 1 when output port 1 is valid. If invalid, will read out 0.	
0094	00095	Read out 1 when output port 2 is valid. If invalid, will read out 0.	
0095	00096	Read out 1 when output port 3 is valid. If invalid, will read out 0.	
0096	00097	Read out 1 when output port 4 is valid. If invalid, will read out 0.	
0097	00098	Read out 1 when output port 5 is valid. If invalid, will read out 0.	
0098	00099	Read out 1 when output port 6 is valid. If invalid, will read out 0.	
0099	00100	Read out 1 when output port 7 is valid. If invalid, will read out 0.	
0100	00101	Read out 1 when output port 8 is valid. If invalid, will read out 0.	

0101	00102	Read out 1 when output port 9 is valid. If invalid, will read out 0.
0102	00103	Read out 1 when output port 10 is valid. If invalid, will read out 0.
0103	00104	Read out 1 when output port 11 is valid. If invalid, will read out 0.
0104	00105	Read out 1 when output port 12 is valid. If invalid, will read out 0.
0105	00106	Read out 1 when output port 13 is valid. If invalid, will read out 0.
0106	00107	Read out 1 when output port 14 is valid. If invalid, will read out 0.
0107	00108	Read out 1 when output port 15 is valid. If invalid, will read out 0.
0108	00109	Read out 1 when output port 16 is valid. If invalid, will read out 0.
0109	**00110**	Reserve
0110	**00111**	Write 1, the Out 1 direct control is valid. Write 0, the Out 1 direct control is invalid.
0111	**00112**	Write 1, the Out 2 direct control is valid. Write 0, the Out 2 direct control is invalid.
0112	**00113**	Write 1, the Out 3 direct control is valid. Write 0, the Out 3 direct control is invalid.
0113	**00114**	Write 1, the Out 4 direct control is valid. Write 0, the Out 4 direct control is invalid.
0114	**00115**	Write 1, the Out 5 direct control is valid. Write 0, the Out 5 direct control is invalid.

6.4 Re-ContA/B protocol

In this way, no need to send any command to the weighing display, display automatically sends the collected data to the computer

Returns a description of the data frame format:

Status	,	**GS/NT**	,	+/-	Current Weight	Unit	**CR**	**LF**
2 Bytes	**2C**	**47 53 /4E 54**	**2C**	**2B/2D**	**7 Units**	**g/kg/t/lb**	**0D**	**0A**

Explain：

Status——2Bytes，OL(Over):4FH 4CH; ST(Stable):53H 54H;US(Unstable):55H 53H

GW/NW——2Bytes，GS/NT: 47 53/4E 54

Display value—— 7Bytes, Contains the decimal point, no decimal point when the high space

Unit ——2Bytes, g：20 67；kg：6B 67；t：20 74；lb：6C 62

For example：

When weighing the display automatically sends the following frame of data:

53 54 2C 47 53 2C 2B 30 31 31 2E 31 32 30 6B 67 0D 0A

Current status：Stable, data value is positive，display value is 11.120kg

7. Auto packaging process

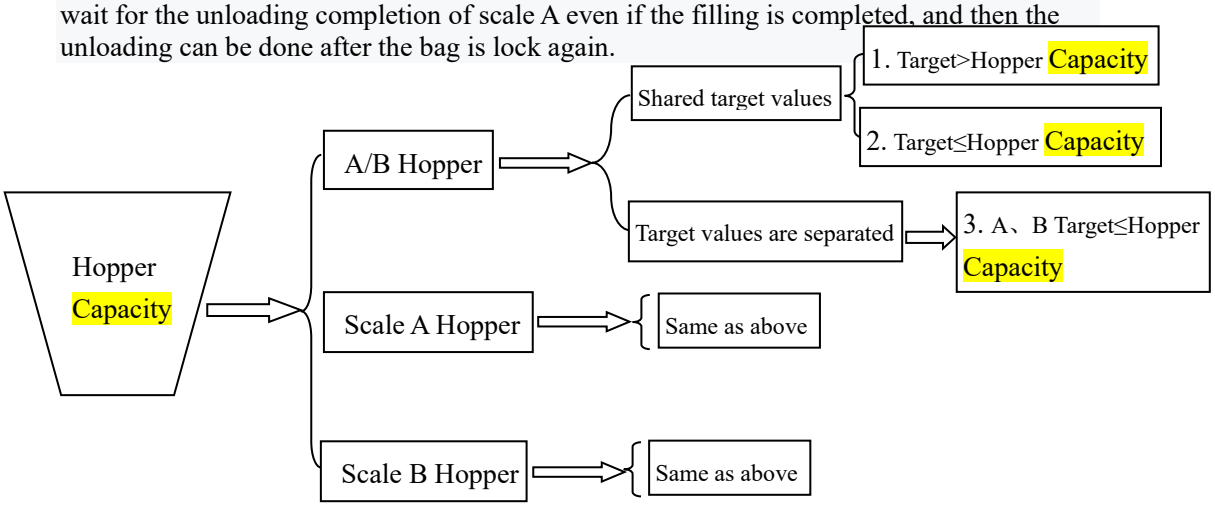
GM9907-LD controller in the packaged state can be automatically controlled automatic packaging coarse, medium and fine flow, and discharge of all the packaging process. Supports net weigher, gross weigher and bulk scale structure, a variety of modes are available. Scale structure and mode can be selected in the scale structure parameters.

7.1 Dual scale with hopper mode packaging

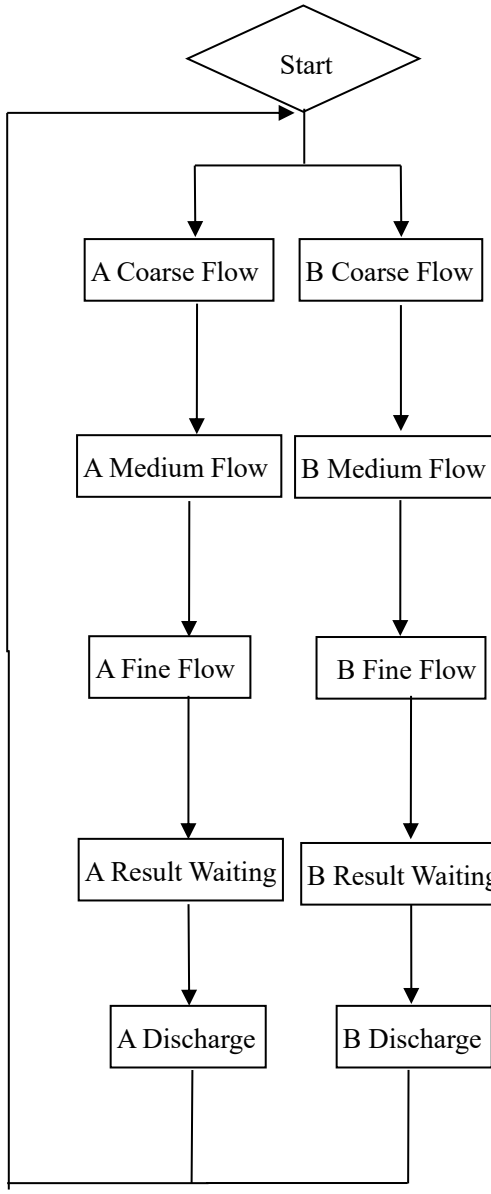
1）Weigher structure choose net weigher, the mode selection parameter for the scale body is A+B hopper, AB individual target mode set to off, target value is set greater than the hopper capacity, if the target value is a hopper capacity integral multiple of "the number of discharge calculated automatically" as a target value / hopper capacity. Otherwise, "the number of discharge calculated automatically" as a target value / hopper volume +1 single hopper, and single scale target value is target value / unloading times automatically calculated. After starting the main interface can see A, B and the target value, then A, B parallel hopper discharge, who measure who discharge first. A total discharge “Automatic counting of discharge times" unlocks bag only once.

2) Weigher structure choose net weigher, the mode selection parameter for the scale body is A+B hopper, AB individual target mode set to off, single target value is set equal to less than the hopper capacity, then the "number of discharge automatically calculated " is 1, single hopper target is a target value. In this case, A, B are alternately discharge, discharge once unlock bag once.

3）Weigher structure choose net weigher, the mode selection parameter for the scale body is A+B hopper, AB individual target mode set to on, In AB scale independent mode，need to set A or B target value, but single hopper can not exceed the hopper capacity, the hopper capacity can not exceed the full capacity; Do not set target value at this time, even if setted is meaningless. Scale A and scale B respectively complete the quantitative process according to the target value of A or target value of B set respectively, and the unloading process of the two scales is separate, that is, when scale A is unloading, scale B needs to wait for the unloading completion of scale A even if the filling is completed, and then the unloading can be done after the bag is lock again.



Process Description:



1) Start "Filling PreDelay Timer"; 2) zero operation is determined (Auto Zero Interval).

1) Start"A/B COMP Inhibit Timer (Co-F)", no determination for the weight;
2) Analyzing Weight: The weight of the material ≥ single scale target -A / B amount touching scale fast, Co-F closed, Me-F open.

1) Start"A/B COMP Inhibit Timer(Me-F)",no determination for the weight ;
2) Analyzing Weight: The weight of the material ≥ single scale target -A / B amount touching scale fast, Me-F closed, Fi-F open.

1) Start"A/B COMP Inhibit Timer(Fi-F)",no determination for the weight ;
2) Analyzing Weight: The weight of the material ≥ single scale target -A / B scale Free Fall, Fi-F closed, wait open.

1)Two result checking mode: Stability and delay determination (operating parameter selected), the end of the process according to the selected setting mode, from clutch bag to discharge.

1) Analyzing Weight: Material<Near Zero Band; 2) start "discharge delay." **3**) To determine the final balance, then enter a "unlock bag" process or a "Filling Start Delay" under start.

※In stop state, the external "start " input signal is valid, the scale starts to detect whether the set target value and the volume of a single hopper. If set to complete the work properly, otherwise it will prompt "target weight unreasonable" message, not start.

※ ***Over/Under ON/OFF***:

When the "OVER/UNDER ON/OFF" turn on, in a packaging process, upon completion of the last weighing process, system will detecting over/under testing , .when the weight is stable, it will output over/under alarm signal.

When over/under is "ON", if this occurs the packaging tolerance over or under, the scale will automatically pause quantitative process, the buzzer sounds, the pop-up window displays the error message "A / B over/under pause" alarm information, the processing waits for the user, then press "enter" key or ON/OFF input "Clear alarm" effectively remove the alarm signal, said alarm clears scale and continue. User can also enter the emergency stop

signal back to the stop state.

※*Unlock bags:*

Controller judge the last scale, "discharge delay" time after closing the discharge at the same time start "unlock bags start delay", after the delay to take the bag if completed will unlock bag if the bag is not completed will wait to unlock bags upon completion of pat bags.

In operation, if stop input is valid, when the scale completes the operation it will unlock bag return to stop state.

7.2 Scale A with hopper mode packing

Weigher structure choose with weighing Hopper, the mode selection parameter for the scale body is single scale with hopper A, since the method is applicable to the case of a mechanical failure or other reasons can only work for a scale.

1) Weigher structure choose with weighing Hopper, the mode selection parameter for the scale body is single scale with hopper A, AB individually set to off target, target value is set Target>Hopper Volume, if the target value is volume of a single hopper integral multiple of "the number of discharge calculated automatically" as a target value / volume of a single hopper. Otherwise, "the number of discharge calculated automatically" as a target value / single hopper volume +1, and the single hopper target is target value / unloading times automatically calculated. Only the scale A work alone, a total of unloading "discharge automatically calculates the number of" unlock bag only once.

2) Weigher structure choose with weighing hopper, the mode selection parameter for the scale body is scale with hopper A, AB individually set to off target, single target value is set equal to less than the hopper volume, then the "number of discharge automatically calculated "is 1, single hopper target is target value. Only scale A work separately at this time, discharge material once and lock the bag once, scale B does not work.

3) Weigher structure choose with weighing hopper, the mode selection parameter for the scale body is scale A with hopper, AB individually set to on target, but can not exceed the volume of hopper, single hopper can not exceed volume; do not set target value at this time, even if you set is meaningless. Scale A completes the quantitative process according to target value A, discharge material once and lock the bag once, scale B does not work.

7.3 Scale B with hopper mode packing

Weigher structure choose with weighing hopper, the mode selection parameter for the scale body is single scale with hopper B, since the method is applicable to the case of a mechanical failure or other reasons can only work for a scale.

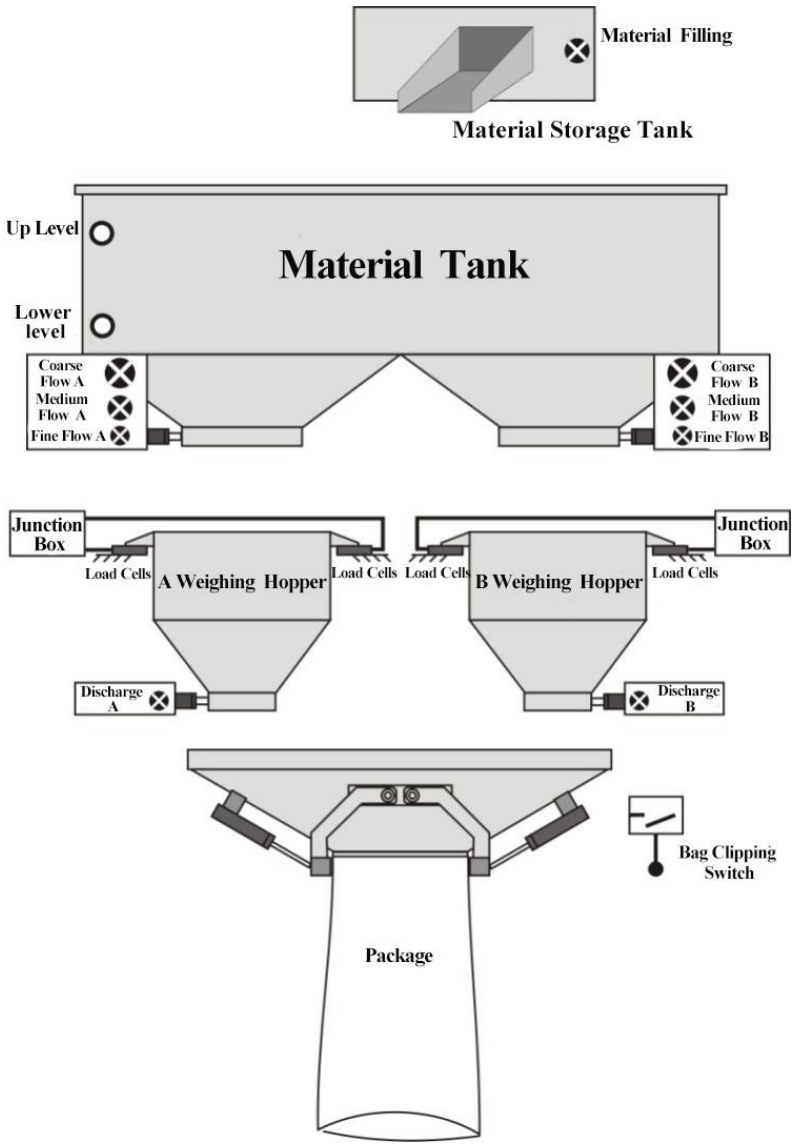
1）Weigher structure choose with weighing hopper, the mode selection parameter for the scale body is single scale with hopper B, AB individually set to off target, target value is set Target>Hopper Volume, if the target value is volume of a single hopper integral multiple of "the number of discharge calculated automatically" as a target value / volume of a single hopper. Otherwise, "the number of discharge calculated automatically" as a target value / single hopper volume +1, and the single hopper target is target value / unloading times automatically calculated. Only the scale B work alone, a total of unloading "discharge automatically calculates the number of" unlock bag only once.

2）Weigher structure choose with weighing hopper, the mode selection parameter for the scale body is scale with hopper B, AB individually set to off target, single target value is set equal to less than the hopper volume, then the "number of discharge automatically calculated "is 1, single hopper target is target value. Only scale B work separately at this time, discharge material once and lock the bag once, scale A does not work.

3）Weigher structure choose with weighing hopper, the mode selection parameter for the scale body is scale B with hopper, AB individually set to on target, but can not exceed the

volume of hopper, single hopper can not exceed volume; do not set target value at this time, even if you set is meaningless. Scale B completes the quantitative process according to target value B, discharge material once and lock the bag once, scale A does not work.

Structure is shown below:



7.4 Dual hopper dual clampe bag AB separate packing mode

The structure of the weighing body is equipped with net weigher mode, and the working mode of the parameters is A/B dual clampers.

1) Weighing body structure should be equipped with with hopper bagging, and the operation mode of the weighing body parameters should be dual hopper dual clip bag AB separate, and the target value of AB should be set as close separately. The target value should be greater than the maximum capacity of a single hopper. If the target value is an integer multiple of the maximum capacity of a single hopper, the "automatically calculated discharge times"

should be the target value/maximum capacity of a single hopper.Otherwise, "automatically calculated discharge times" is the target value/the maximum capacity of a single hopper +1, and the single weighing target value is the target value/the automatically calculated discharge times.At this time, A, B scales work separately, A total of discharge "automatically calculated discharge times" only loose the bag once.

2) Weighing body structure should be equipped with with hopper bagging. The operation mode of the weighing body parameters should be dual hopper dual clip bag AB separate, and the target value of AB should be set as close separately. If the target value is set to be less than or equal to the maximum capacity of the single hopper, then the "number of discharging calculated automatically" is 1, and the target value of the single scale should be the target value.At this time only A, B scale independent work, discharge A loose bag once.

3) Weighing body structure should be equipped with with hopper bagging. The working mode of the parameters of the weighing body should be dual hopper dual clip bag AB separate, and the target value of AB should be set as open separately. The target value of A and B should be set separately, but not exceed the maximum capacity of single hopper, and the maximum capacity of single hopper should not exceed the maximum range.Do not set the target value at this time, even if set also useless.The A scale completes the quantitative process according to the target value of A, discharge the material once and loosening the bag once, while the B scale completes the quantitative process according to the target value of B, discharge the material once and loosening the bag once.

After starting, if A has finished discharge, controller will start the conveyor to start conveying.The same is B scales.

7.5 Dual hopper dual clip bag AB Comb packing mode

The structure of the weighing body is equipped with with hopper mode, and the working mode of the parameters of the weighing body is dual hopper dual clip bag AB comb.

1) Weighing body structure should be equipped with with hopper bagging, and the operation mode of the weighing body parameters should be dual hopper dual clip bag AB comb, and the target value of AB should be set as close separately. The target value should be greater than the maximum capacity of a single hopper. If the target value is an integer multiple of the maximum capacity of a single hopper, the "automatically calculated discharge times" should be the target value/maximum capacity of a single hopper.Otherwise, "automatically calculated discharge times" is the target value/the maximum capacity of a single hopper +1, and the single weighing target value is the target value/the automatically calculated discharge times.At this time, A, B scales work separately, A total of discharge "automatically calculated discharge times" only loose the bag once.

2) Weighing body structure should be equipped with with hopper bagging. The operation mode of the weighing body parameters should be dual hopper dual clip bag AB comb, and the target value of AB should be set as close separately. If the target value is set to be less than or equal to the maximum capacity of the single hopper, then the "number of discharging calculated automatically" is 1, and the target value of the single scale should be the target value.At this time only A, B scale work separately, discharge and loose bag once.

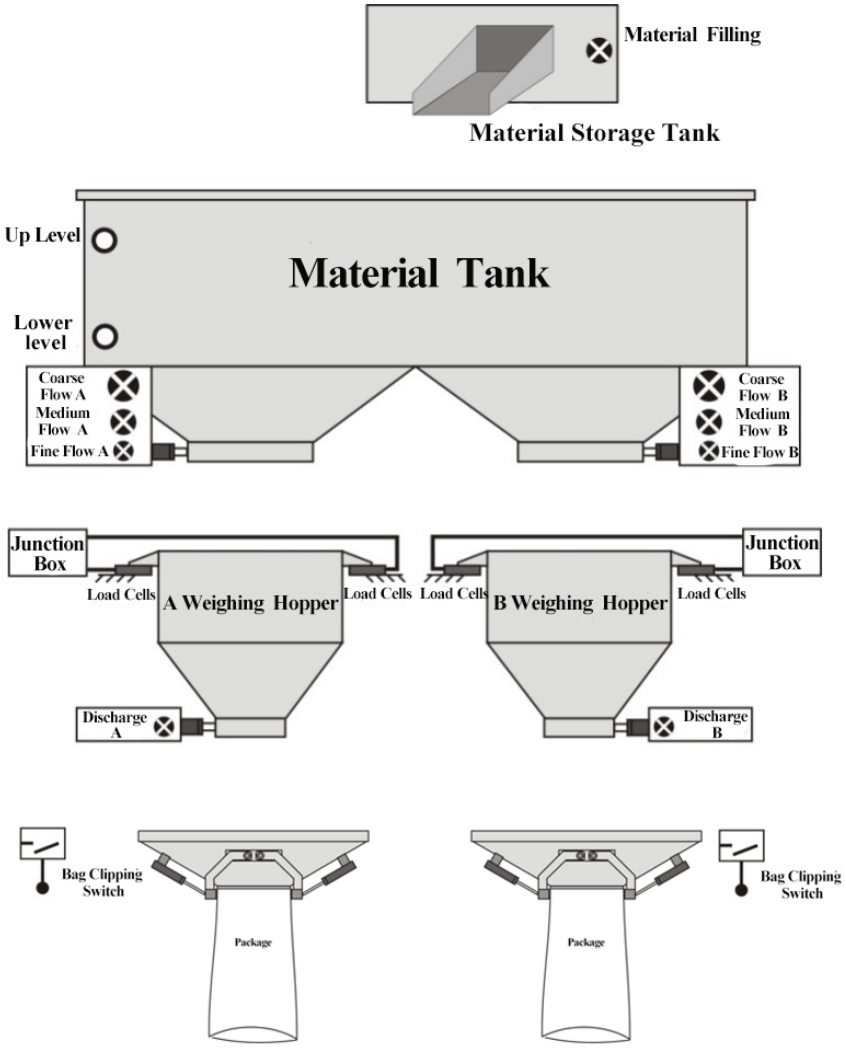
3) Weighing body structure should be equipped with with hopper bagging. The working mode of the parameters of the weighing body should be dual hopper dual clip bag AB comb, and the target value of AB should be set as open separately. The target value of A and B should be set separately, but not exceed the maximum capacity of single hopper, and the maximum capacity of single hopper should not exceed the maximum range.Do not set the target value at this time, even if set also useless.The A scale completes the quantitative process according to the target value of A, discharge the material once and loosening the bag once, while the B

scale completes the quantitative process according to the target value of B, discharge the material once and loosening the bag once.

After starting, B scale began to filling materials, A scale also began to filling materials, and wait for A and B are loose bags, controller control conveyor started, the packaging bag filling finished will be transported, and then clip the bag to start the next process.

Note: Dual with hopper bagging adopts two hoppers, two clip bag mechanisms, and the work of AB scale (work of the conveyor, other work will not affect each other).

Structure is shown in the following figure:



7.6 Dual scale no hopper mode packing

No hopper mode, material from the material tank through the filling mechanism filling directly to the bag (coarse, medium, fine flow), controlling weight metering process sampling is complete (processing load cells mounted on the hopper) in a packaging bag. After the completion of metering, controller controls to unlock bag. The difference between no hopper packing and with hopper packing process is that the sensor is mounted on the hopper. After

starting, after complete lock bag operation, it starts filling delay process.

Weigher structure choose no hopper packaging, the mode selection parameter choose AB Comb No Hopper. 1) If AB target value is set to Off separately , the target value is the target value of A and B scale; 2) If AB target value is set to On separately, the target values of A and B are respectively the targets of A and B. All are independent of the volume, but can not exceed the volume.

After starting, scale B bag begins to fill, scale A bag begins to fill, and waits for the A and B unlock bags, controller control conveyor started, transport the finished packaging bag ,start the next process.

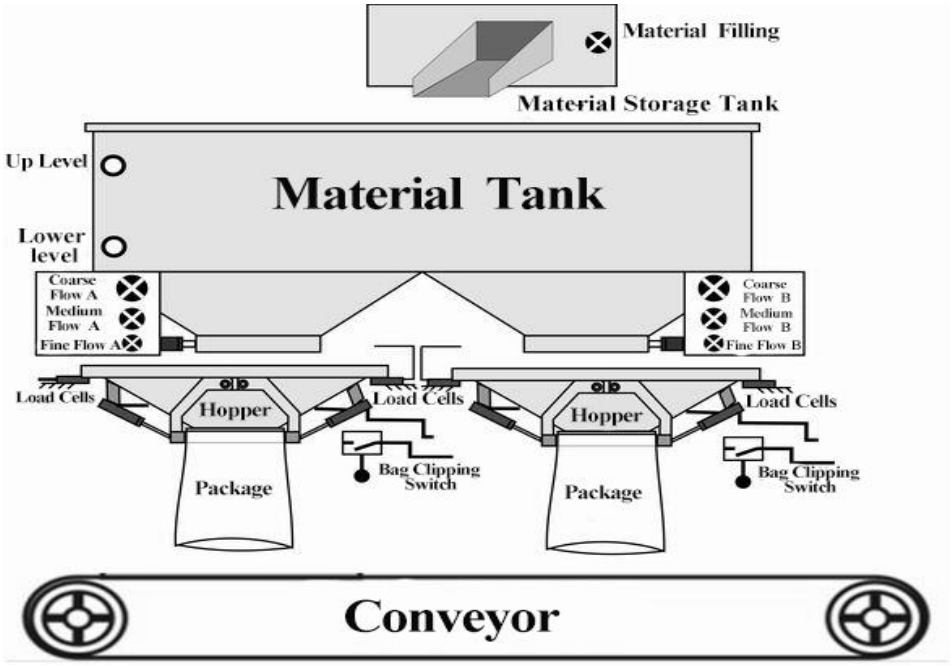
If the bag filling of A is completed and the bag is loosened, and the bag is not clip in B, controller controls the conveyor to start;If the bag is not clip in the scale A, the bag filling is completed and the bag is loosened in the scale B, and controller controls the conveyor to start.

7.7 Dual scale no hopper individual packing

Weigher structure choose no hopper bagging, the mode selection parameter choose AB Separate No Hopper. 1) If AB target value is set to Off separately , the target value is the target value of A and B scales; 2) If AB target value is set to On separately, the target values of A and B are respectively the targets of A and B. All are independent of the volume, but can not exceed the volume.

After start, any scale finish filling then unlock bag, controller will start transporting conveyor.

Structure is shown below:



7.8 Bulk accumulation process

1) Bulk scale AB Interlock: Under the operating state,scale A start to add the material to the weighing tank (coarse, medium and fine), and the weight sampling of the controllering control process is completed in the weighing tank (the weighing load cell is mounted on the weighing tank). After the controllering is completed, the material is discharged through the unloading mechanism on the weighing tank and the weight value is accumulated. When scale

A is dischargeing ,scale B starts feeding and carry out the weighing.The weighing units of A and B are interlocked for loading/unloading.

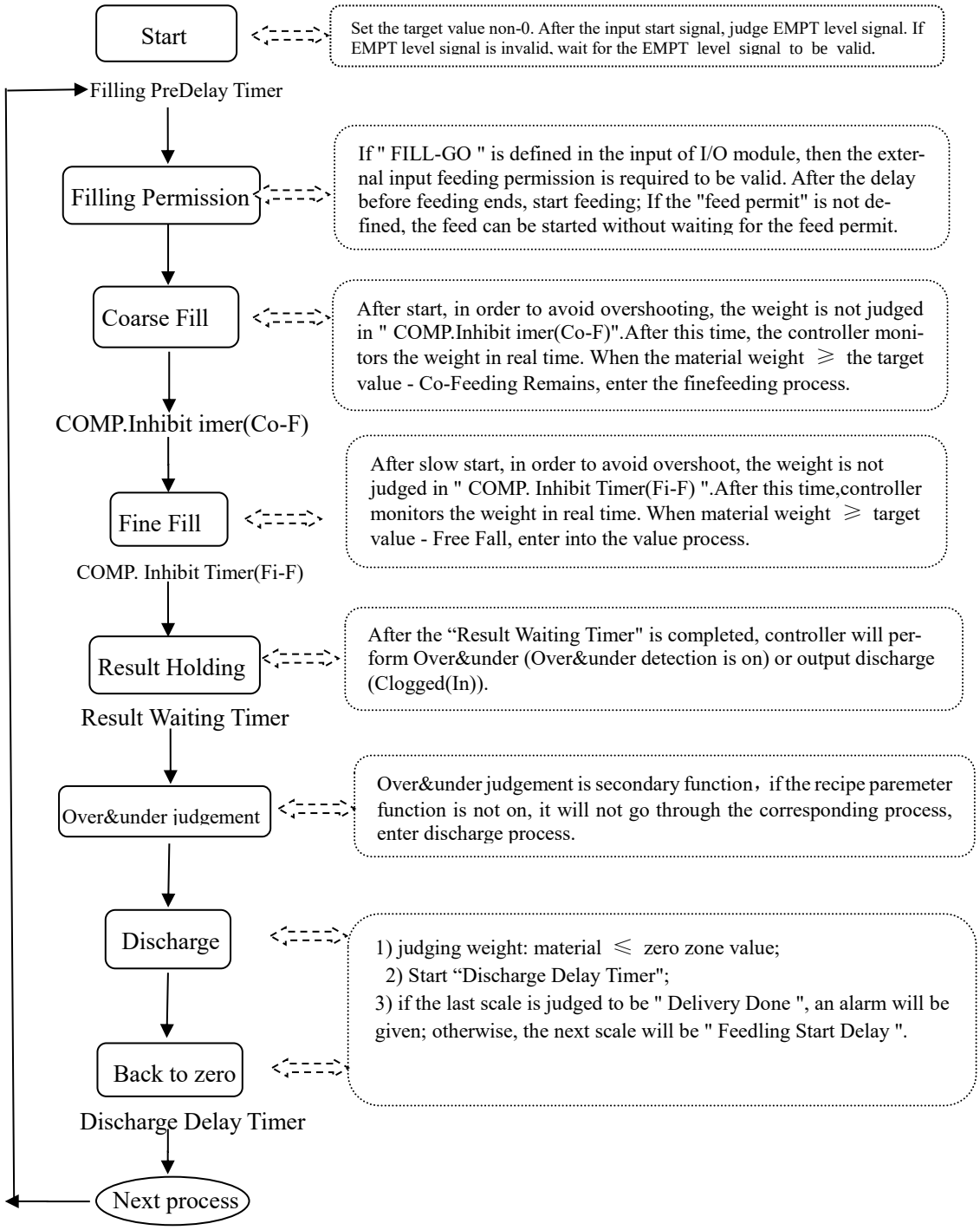
2) Bulk scale AB independent: The two scales can be fed and discharged at the same time,without interlocking.

3) Bulk single hopper A:Only scale A works.

4) Bulk single hopper B: Only scale B works.

works.

Basic process description:



8. Motor Work Process

8.1 Motor Filling Portion

8.1.1 Step Motor Drive Filling

Step motor drive control filling door ON/OFF: I/O Module involved are: **O31 (A:Filler Gate PWM) / O32 (A:Filler Gate DIR) / O33 (B:Filler Gate PWM) / O34 (B:Filler Gate DIR), I31 (A:Filler Gate Closed Pos.)/ I32 (B:Filler Gate Closed Pos.). (I31 / I32-The signal is determined by the type of signal in place).**

Take scale A Coarse flow, Medium flow, Fine flow for example:

- Coarse flow process: controller control O32 (**A:Filler Gate DIR**) to ensure the gate opening direction to the direction of motor rotation, then O31 (**A:Filler Gate PWM**) according to the A: filler motor frequency output pulse to control the stepping motor rotate to the gate opening direction, O31 (**A:Filler Gate PWM**) stop the output pulse after the number reaches the set value, the filler gate stops rotating, this is coarse flow state. Then controller Change O32 (**A:Filler Gate DIR**) output as closing gate direction.
- Medium flow process: O31 (**A:Filler Gate PWM**) according to the A:filler motor frequency output pulse to control the stepping motor rotate to the gate closing direction, O31 (**A:Filler Gate PWM**) stop the output pulse after the number reaches the set value, the filler gate stops rotating, this is medium flow state.
- Fine flow process: O31 (**A:Filler Gate PWM**) according to the A:filler motor frequency output pulse to control the stepping motor continuing rotate to the gate closing direction, O31 (**A:Filler Gate PWM**) stop the output pulse after the number reaches the set value, the filler gate stops rotating, this is fine flow state.
- Filling closing: O31 (**A:Filler Gate PWM**) according to the A:filler motor frequency output pulse to control the stepping motor continuing rotate to the gate closing direction, until detecting I31 (**A:Filler Gate Closed Pos.**) value input, then it stop output pulse signal, the filler gate stops rotating, filling is completely closed.

8.1.2 Motor Drive Filling

Motor drive mode control filler gate ON/OFF: I/O Module involved are: scale A O43 (**A:Filler Gate Open**) / O45 (**A:Filler Gate Close**), **I31 (A:Filler Gate Closed Pos.), scale B O44 (B:Filler Gate Open) / O46 (B:Filler Gate Close), I32 (B:Filler Gate Closed Pos.).**

Take scale A Coarse flow, Medium flow, Fine flow for example:

- Coarse flow process: scale A begins filling after a delay time t1. Controller first controls scale A **O43 (A:Filler Gate Open)** signal output valid, the effective time is **A: Co-F, Gate Open Time**, start coarse flow process.
- Medium flow process: weight of the material in the scale A≥single scale target value-scale A coarse flow remains, scale A **O45(A:Filler Gate Close)** signal output is valid, the valid time is "scale A Coarse flow Gate Open Time – scale A Medium Flow Gate Open Time "
- Fine flow process: weight of the material in the scale A≥ single scale target value-scale A medium flow remains, A **O45(A:Filler Gate Close)** signal output is valid, the valid time is "scale A Medium Flow Gate Open Time – scale A Fine Flow Gate Open Time "
- Flow off: weight of the material in the scale A≥ single scale target value-scale A

fine flow remains, scale A **O45(A:Filler Gate Close)** signal output is valid, until detecting **A filler gate limit signal I31（A:Filler Gate Closed Pos.).**

- note:in case closing process is longer than the filler gate close overtime, controller has not yet detected I31 (**A:Filler Gate Closed Pos.**),Then the controller will stop O45 (**A:Filler Gate Close**),and alarm scale A filler gate close overtime.

Note: When controller started, it is necessary to detect whether filler gate and dis charge gate are in the limit, if not, controller will alarm and cant'be started.

8.2 Motor lock Bag Portion

8.2.1 Step Motor Drive lock/unlock bag

Step motor drive controls bag lock/unlock: I/O Module involved are: **O35 (A:Clamper PWM) / O36 (A: Clamper DIR) / O37 (B:Clamper PWM) / O38 (B: Clamper DIR), I33 (A:Bag Released)/ I34 (B:Bag Released).** (I37/I38 signal is determined by the limited signal type.)

Take binyES with metering hopper mode, bag lock/unlock process for sample:

- Lock bag process: controller control **O36 (A: Clamper DIR**) output, ensure motor rotating direction is lock bag direction, then **O35 (A:Clamper PWM**) according to the **A clutch motor frequency** to output pulse, control lock/unlock step motor rotating to lock bag direction, **O35 (A:Clamper PWM)** number reach setted **scale A clutch pulse number** it will stop output pulse signal, at this time lock/unlock mode is in the lock bag state. Then controller change **036** (**A: Clamper DIR**) output to unlock direction.
- Unlock bag process: **O35 (A:Clamper PWM)** according to the setted **scale A clutch motor frequency** to output pulse, control unlock step motor rotating to unlock direction, until detecting **I33(A:Bag Released)** input valid then stop output pulse signals, this is unlock state. Note： if unlock bag process time more than **Bag Release Overtime**， controller has not yet detected **I33（A: Bag Released）**, then the controller will stop output **O35（A:Clamper PWM）**， and alarm **scale A: Bag Unlock overtime.**

8.2.2 Motor Drive Dual-Limit lock/unlock bag

Motor drive dual-limit controls bag lock/unlock: I/O Module involved: **O9 (A: Lock Bag) / O47 (A:Bag Unlock)/ O12 (B:Lock Bag)/ O48 (B:Bag Unlock), I23 (Bag Locked) / I33 (A:Bag Released) / I24 (B:Bag Locked) / I34 (B:Bag :Released).** (I33/I34 signal is determined by the Limit signal type).

Take binyES with metering hopper mode, bags lock/unlock process for sample:

- Lock bag process: controller output lock bag signal (O9 **A: Lock Bag**) to control Clutch bag motor rotating to lock bag direction, until detecting bag locked signal (I23 **Bag Locked**) input valid then stop output lock bag signal (O9 **A: Lock Bag**), at this time lock bag mode is in the lock state. Note: in case lock bag process time exceeds the setted **Bag Lock Overtime,** controller has not yet detected bag locked signal (I23 **Bag Locked**), then controller stop output lock bag signal (O9 **A: Lock Bag**), and alarm **A Bag Lock Overtime**.
- Unlock bag process: controller output unlock bag signal(O47 **A:Bag Unlock**) to control Clutch bag motor rotating to unlock bag direction, until detecting Clutch Limit Signal Type (I33 **A:Bag Released**)input valid then stop output unlock bag signal(O47 **A:Bag Unlock**), at this time lock/unlock mode is in the unlock state. Note: in case unlock bag process time exceeds the setted **Bag Release Overtime,**

controller has not detected bag released signal (I33 **A:Bag Released**), then controller stop output unlock bag signal (O47 **A:Bag Unlock**), and alarm **scale A Bag Release Overtime.**

8.2.3 Motor Drive Single-Limit lock/unlock bag

Motor drive dual-limit controls lock/unlock bags: I/O Module involved: **O9 (A lock bag) / O47 (A unlock bag)/ O12 (B lock bag)/ O48 (B unlock bag), I23 (A Bag Locked) / I24 (B Bag Locked)**

Take binyES with metering hopper mode, bags lock/unlock process for sample:

- Lock bag process: controller control O9 **(A lock bag)** I/O module output signals, output signal until detecting bag locked signal I23 (Bag Locked) input is valid, this output signal output is unvalid, lock bag.
- Unlock bag process: controller control O47 **(A unlock bag)** I/O module output signals, in order to unlock bag, output signal time of duration is for unlock bag output, this output signal is unvalid.

Note: in case lock bag time of duration exceeds setted **Bag Lock Overtime**, controller has not detected A Bag Locked I23 **(A Bag Locked)**, then controller will stop output O9 **(A lock bag)**, and alarm **scale A Bag Lock Overtime.**

8.3 Motor Discharge Portion

8.3.1 Step Motor Drive Discharge

Step motor control discharge: I/O Module involved are: I25 (**A : DISC Gate Closed Pos.**) **scale A O39 (A:DISC Gate PWM), O40 (A:DISC Gate DIR).**

Take scale A discharge for sample:

- Discharge gate opening process: controller control **O40 (A:DISC Gate DIR**)output, to ensure that the motor rotating direction is gate opening direction,then **O39 (A:DISC Gate PWM)** according to the set **Discharge Gate Opened Motor Frequency** output pulse, to control the discharge step motor rotating to discharge opening gate direction, **O39 (A:DISC Gate PWM)** number reaches setted **A discharge pulse needed number**'s value then stop output pulse signals,at this time discharge mode is in the open state.
- Discharge gate closing process: after the discharge gate opened,if controller detecting hopper weight lower than **Near Zero Value**,then start the **Discharge Delay Time**, when the discharge delay time is finish, controller change **O40 (A:DISC Gate DIR)** as the closing direction, **O39 (A:DISC Gate PWM)** according to the setted **Discharge Gate Opened Motor Frequency** to output pulse, to control the discharge step motor rotating to closing gate direction, until detecting **I25 (A : DISC Gate Closed Pos.)**input value then stop output pulse signals, at this time is closing gate state. Note: in case closing process time exceeds setted **DISC Gate Close Overtime,** controller has not yet detecting closing gate signal **I25 (A DISC gate closed)**, then controller will stop output **O39 (A:DISC Gate PWM)**, and alarm **scale A discharge gate close overtime.**

8.3.2 Motor Drive Single-Limit Discharge

Motor positive and negative rotation single-limit mode control discharge: I/O Module involved are: **O11 (A: DISC) O14 (B: DISC) O49 (A:DISC Gate Close) O50 (B: DISC Gate Close), I25 (A : DISC Gate Closed Pos.)/ I26 (B : DISC Gate Closed Pos.).**

Take scale A discharge process for sample:

- Discharge gate open process: when discharge process begin, controller output discharge signal **O11 (A: DISC)** to control discharging motor rotating to discharge gate open direction, and continue setting **scale A discharge gate open output valid time** setted discharge motor open gate signal output time, then close discharge signal **O11 (A: DISC)**output.
- Discharge gate close process: after the discharge gate open, if controller detecting hopper weight lower than **Near Zero Value,** then start the **Discharge Delay Time**, when the discharge delay time is finish, it output discharge gate close signals **O49 (A:DISC Gate Close)** to control discharge motor rotating to discharge gate closing direction, until detecting discharge gate close signal **I25 (A : DISC Gate Closed Pos.)** input valid then stop output discharge gate close signal **O49 (A:DISC Gate Close)**,at this time discharge gate is closed. **Note**: in case discharge gate close process time exceed setted **A Discharge gate close overtime**, controller has not yet detecting discharge gate close signal **I25 (A : DISC Gate Closed Pos.),** then controller will stop output **O49 (A:DISC Gate Close)**, and alarm **scale A discharge gate close overtime.**

8.3.3 Motor Drive Dual-Limit Discharge

Motor positive and negative rotation dual-limit mode control discharge: I/O Module involved are: **O11 (A: DISC) / O14 (B: DISC) / O49 (A:DISC Gate Close) / O50 (B: DISC Gate Close), I25 (A : DISC Gate Closed Pos.)/ I35 (A:DISC Gate Closed Pos.) /I26 (B : DISC Gate Closed Pos.) / I36 (B: DISC Gate Closed Pos.).**

Take scale A discharge process for sample:

- Discharge gate open process: when discharge process begin, controller output discharge signal **O11 (A: DISC)** to control discharging motor rotating to discharge gate open direction, until detecting DISC Gate Open **I35 (A:DISC Gate Closed Pos.)** input valid then stop output discharge signal **O11 (A: DISC)**, at this time discharge gate is open state. Note: in case discharge gate open process time exceeds the setted **A discharge gate open overtime,** controller has not yet detected DISC Gate Open **I35 (A:DISC Gate Closed Pos.)**, then controller stop output **O11 (A: DISC)**, and alarm **scale A discharge gate open overtime**.
- Discharge gate close process: After the discharge gate open, if controller detecting hopper weight lower than **Near Zero Value**, then start the Discharge Delay Time, when the discharge delay time is finish, controller output discharge gate close signal **O11 (A: DISC)**, to control the discharge motor rotating to close gate direction, until detecting DISC Gate Close **I25 (A : DISC Gate Closed Pos.)** input value then stop output discharge gate close signal **O11 (A: DISC)**, at this time is discharge gate close state. Note: in case discharge gate close process time exceeds setted **A discharge gate close overtime,** controller has not yet detecting DISC Gate Close signal **I25 (A : DISC Gate Closed Pos.)**, then controller will stop output **O11 (A: DISC)**, and alarm **A discharge gate close overtime.**

8.3.4 Motor Drive Rotating Discharge

Motor drive rotating discharge control discharge: I/O Module involved are: **O11 (A: DISC) / O14 (B: DISC), I25 (A : DISC Gate Closed Pos.)/ I26 (B : DISC Gate Closed Pos.).**

Take scale A discharge process for sample:

- Discharge gate open process: when discharge process begin, controller output discharge signal **O11 (A: DISC)** to control discharging motor rotating to discharge gate open direction, and continue setting **discharge motor gate open signals output time,** then close discharge signal **O11 (A: DISC)** output.

- Discharge the close process: After the discharge gate open, if controller detecting hopper weight lower than **Near Zero Value**, then start the Discharge Delay Time, when the discharge delay time is finish, controller output discharge signal **O11 (A: DISC)**, to control the discharge motor rotating to discharge gate close direction, until detecting DISC Gate Close **I25 (A : DISC Gate Closed Pos.)** input value then stop output discharge signal **O11 (A: DISC)**, at this time is discharge gate close state.

Note: In case discharge gate close process time exceeds **discharge gate close over time,** controller has not yet detecting DISC Gate Close signal **I25 (A : DISC Gate Closed Pos.),** then controller will stop output **O11 (A: DISC)**, and alarm **scale A discharge gate close overtime.**

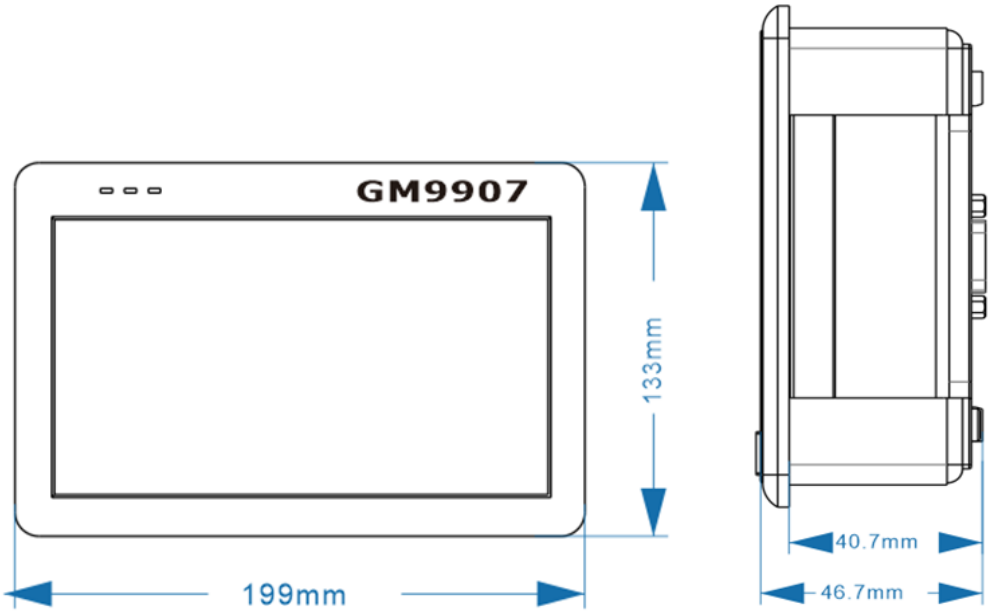
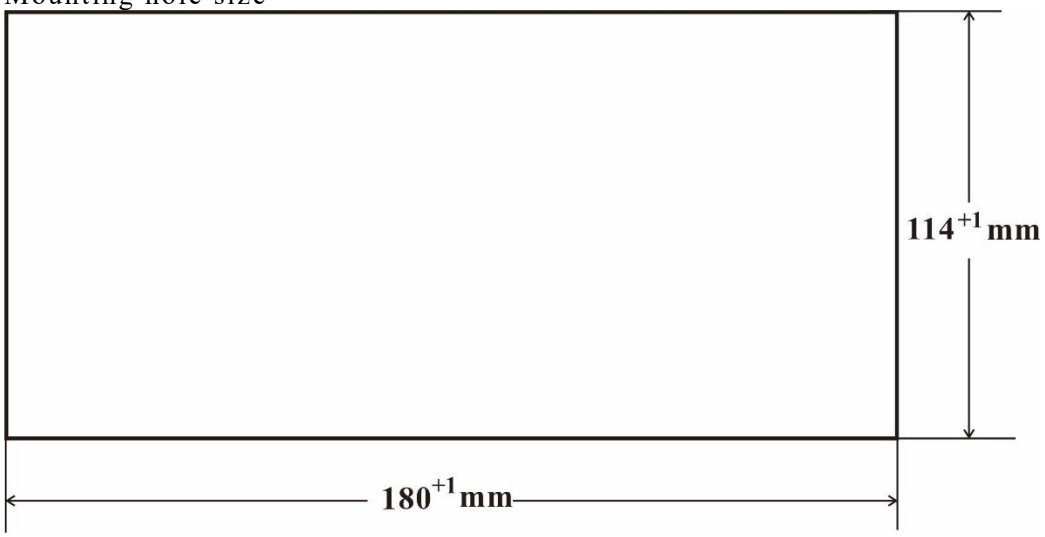
8.4 Motor Debug Function

Motor debug function is to facilitate user's quick determine the door size, coarse flow, medium flow, fine flow, take debug fine flow open gate for example:

Steps as follow：

- Step1: The left side of the interface is the current number of coarse, medium and fine pulses. You can modify the current pulse number of fine flow in the input box.
- Step2: Click "Fi-F Test" button to make the controller output fine flow signal. User determines whether the current pulse number is appropriate by checking the opening size of the filling door. (note: click " Fi-F Test"" again to close fine flow. Controller can only be in one state, can not in the state of coarse flow and medium flow at the same time).
- Step3: If the pulse number has been modified, press the "save" button to save the modified pulse number. If do not want to save the modified pulse number, exit the motor debugging interface to restore the previous coarse, medium and fine pulse number.

9. Dimension (mm)



Mounting hole size