GMC-P7

User's manual

GMC-P7(F2)
110612020003
V01.01.04

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Company website http://www.szgmt.com www.gmweighing.com

Implementation standards of this product:**GB/T 7724—2008**

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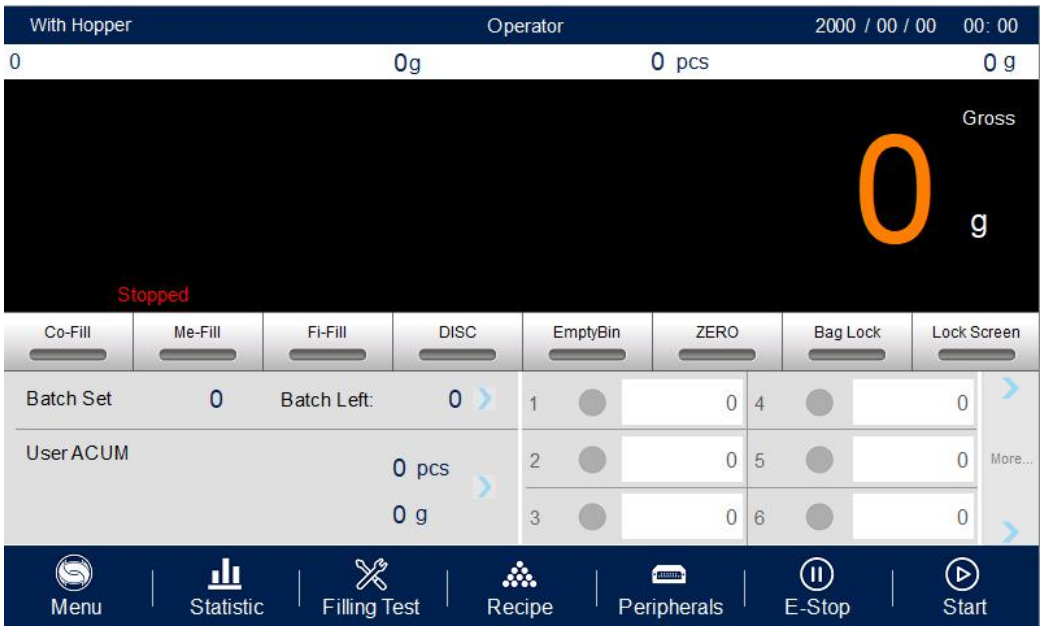
1. Outline

GMC-P7 bagging controller is a new weighing control controller specially developed for the single scale incremental method automatic quantitative packing scale. The controller English displays interface for easy operation; completely new algorithm coarseer and more accurate control so that the load; the USB port and dual port serial device to make it easier to system interconnect. It can be widely used in fill, chemical, grain and other industries that require quantitative packaging equipment.

1.1 Functions and Features

- Full English display interface, make the operation more intuitive and easy
- There are five modes of bagging application, hopper, non hopper, Ton scale, servo motor, PLC.
- **28-**digital input and output control **(**12 in **/ 16** out), input and output port positions can be customized.
- I/O Module test function, convenient for debugging of packing scale
- Fully automatic double material speed, three material speed filling control, with jog filling function
- Twenty formulas can be stored to facilitate bagging of different range materials
- USB interface facilitates import and export of various paracontrollers
- Fill control function, convenient control connection between bagging scale and front filling equipment
- Fill speed adaptive function
- IO User Logic programming
- Auto free fall correction function
- Multiple digital filtering
- Batch setting function
- Bag patting function, suitable for bagging of powder materials
- Automatic zero tracking
- Time / date function
- Three-level user identity setting
- Dual serial port, external serial printer, computer or second display
- With single port communication function**,** it is convenient to communicate with the host computer

1.2 Front panel description



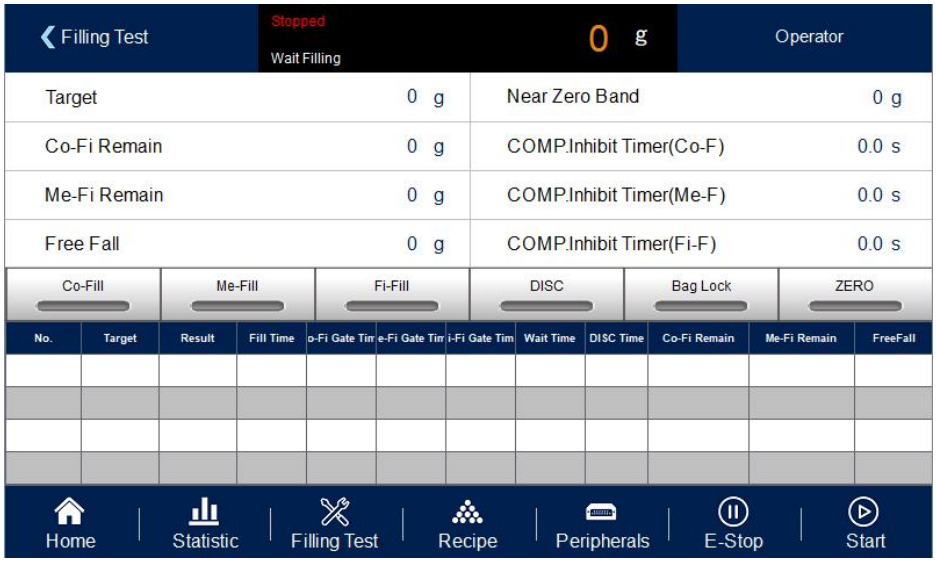
①User Info：Display the current login user ID, Recipe ID,System time,ACUM And Batch

②Weight status：Including weight value display, weight unit display, **8**bit zone display and output I/O Module short cut key.

③Packaging information area： display current ACUM information, short cut setting batch and target value.

④Functional paracontroller area：Controller menu paracontrollers query Settings and the corresponding operation keys

Interface 1 description:



①**Short cut set receipt pare**：can quickly set receipt paracontroller.

②**Packing history recording**：can easily review current history data, easy to compare.

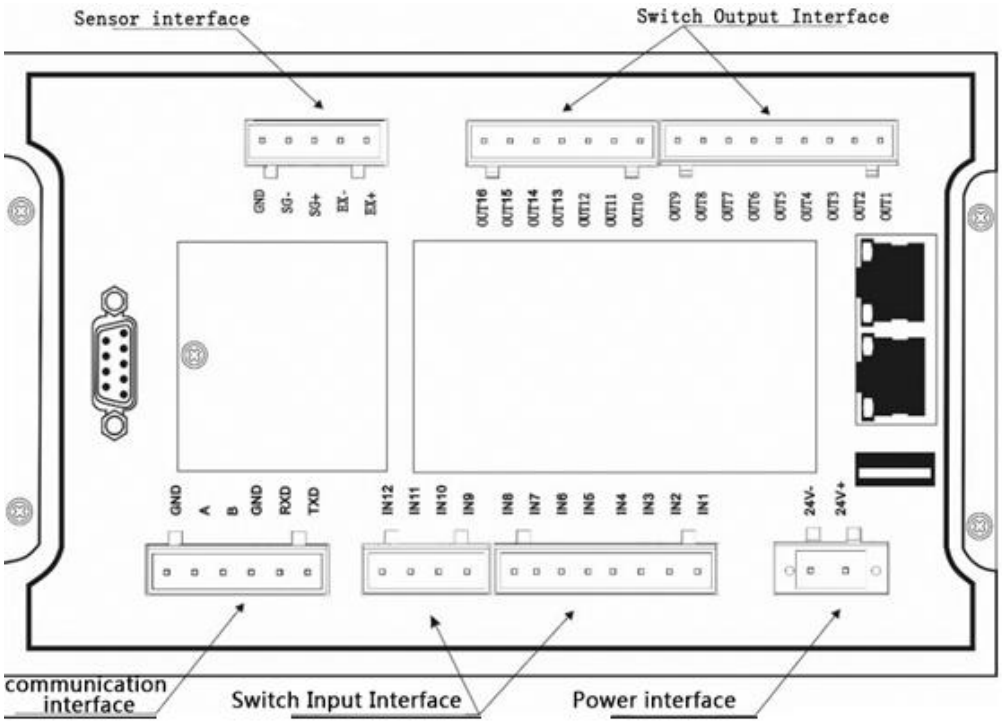
Indicator light description：

Left 1: power light;

Left 2: Serial port 1-RS232 communication indicator light, the indicator light flashes during communication

Left 3: Serial port 2-RS485 communication indicator light, the indicator light flashes during communication

1.3 Rear panel description



1.4Technical Specifications

1.4.1General Specifications

Power supply: DC24V

Power filter: included

Operating temperature: -10 ~ 40 ℃

Maximum humidity: 90% RH non-condensing

Power consumption: about 15 W

Dimensions: 233 mm × 168 mm × 63 mm

1.4.2 Analog part

Load cell power supply: DC 5 V 125 mA (MAX)
Input impedance: 10MΩ
Zero adjustment range: 0. 00 2 ~ 15 mV (when loal cell 3mV / V)
Input sensitivity: 0.02uV / d
Input range: 0. 0 2 ~ 15mV
Conversion: S igma- D elta
A/D conversion speed: 120, 240, 480, 960 times / sec
Non-linear: 0.01% FS
Gain drift: 10PPM / ℃
The maximum display accuracy: 1 / 100,000

1.4.3digital part

Display: 7 inch resistive touch screen
Negative Number Display: "-"
Overload Indication: “Over Full Scale / Load cell Input Under."
Decimal point position: 5 optional

2. Installation

2.1General principles

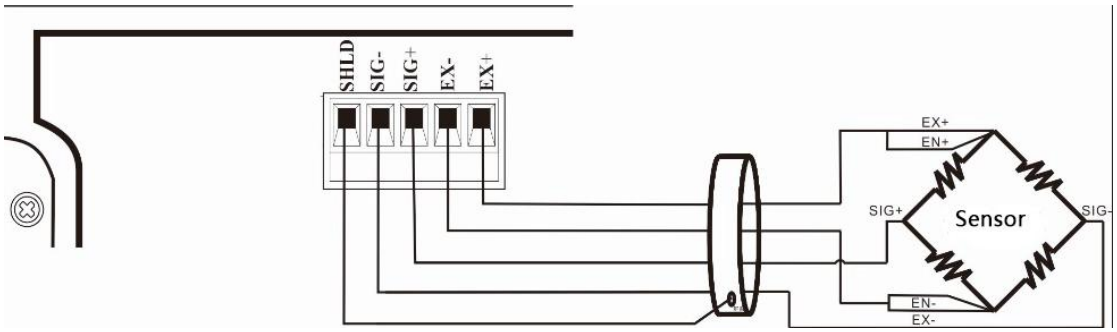
1）Make appropriate installation holes on the control box, (size: 213（±1）mm ×147（±1）mm)

2）Install GMC-P7 into a control box.

3）Remove the fixing plates on both sides of GMC-P7, fix it with the fixing plates and lock them with M4*12 screws.

2.2Load Cell connection

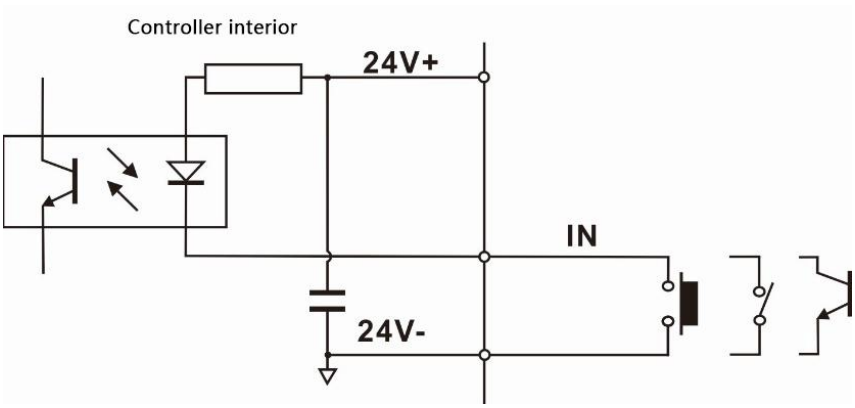
GMC-P7 bagging controller can be connected to a resistive strain bridge load cell. When using a six-wire load cells, you must bridge the SN+ with EX+ and bridge the SN- with EX-



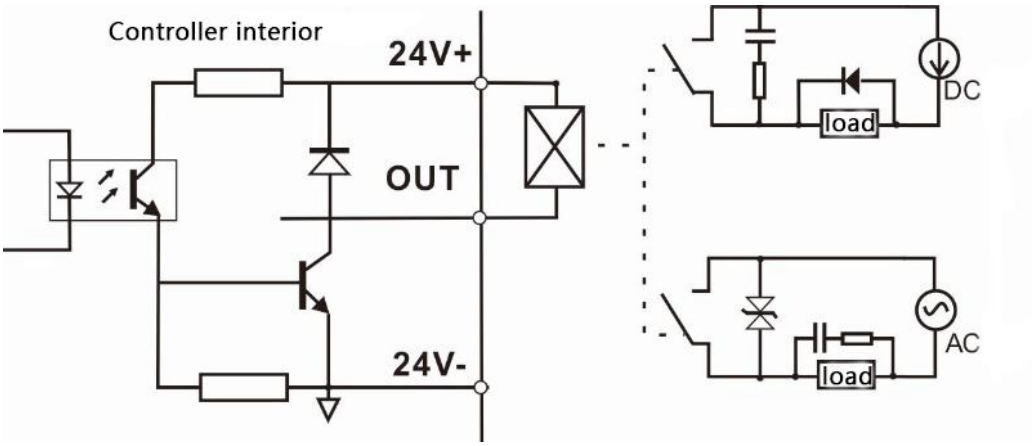
EX+:Excitation+EX- : Excitation- **SN+** : Sense+ **SN-** : Sense- **SIG+** : Signal+ **SIG-** : Signal -

2.3I/O Module Port connection

GMC-P7 bagging controller controls 28 lines I/O (12 input and 16 output). It uses optoelectronic 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

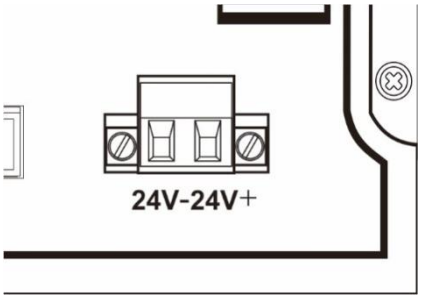


I/O Module output connection diagram

GM C-P7 I/O signals definitions refer Section **4.8.**

2.4 Power supply connection

GMC-P7 bagging controller use 24V DC power supply. The connection is as shown below:



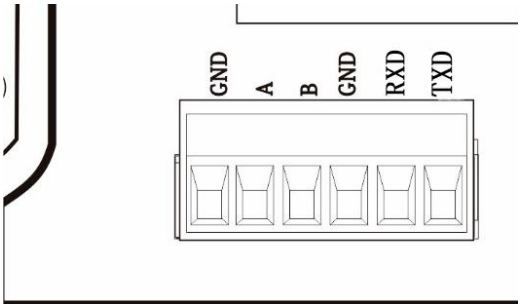
Power terminal diagram

24V+ connect DC+，24V-connect DC-.

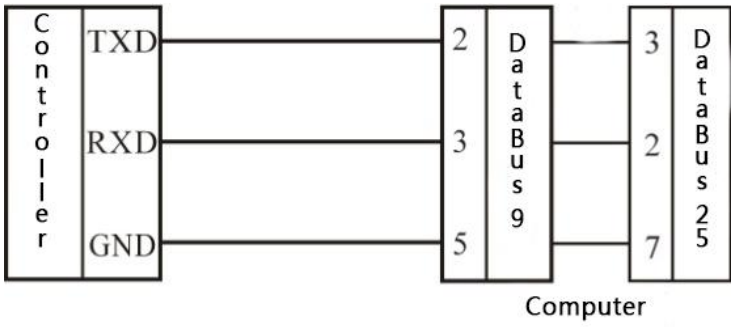
Note：this product use 24V DC power supply，use 220V AC power supply will permanently damage the controller and cause danger

2.5 Serial port connection

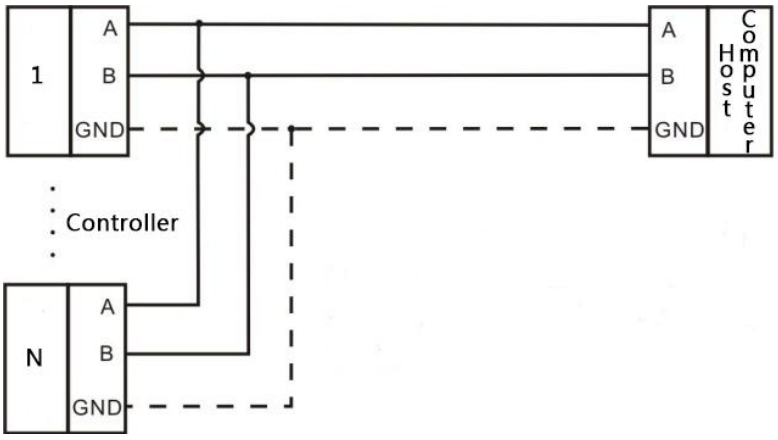
GMC-P7 provides two serial ports as shown in the figure below. One is **RS - 232** mode (terminal port **TXD, RXD, GND**); the other is **RS - 485** , (terminal port **A** , **B** , **GND**). Serial port support: **MODBUS** protocol, continuous mode and print format.



Controller and computer connection diagram



Controller and computer connection diagram (RS-**232** mode)



Controller and host computer connection diagram (RS-**485** mode)

2.6 Touch screen calibration

Touch screen needs to be calibrated when the new product is used for the first time or after a long time. The touch screen calibration method:

GMC-P7 power on, long press any point on the touch screen at the same time, system turn to touch screen calibration interface. Long press cursor position on touch screen, cursor position calibrate finish, after the interface displays the coordinates of this point,

enter to next calibrate automatically. Follow cursor position changes long press accordingly, calibrate finish, and interface show 5 calibration point coordinates, enter to main interface automatically. If enter the calibration interface of the touch screen by mistake, press the "cancel" button in the lower right corner to exit the interface.

3. User Manage

In order to prevent the malfunction of the controller caused by the malfunction of the controller, the **GMC-P7**bagging controller provides **three** levels of authority (operator, Technician and administrator) to choose: where the **administrator can perform all operations on the controller** (not open to the user) . Operator and Technician permissions are as follows:

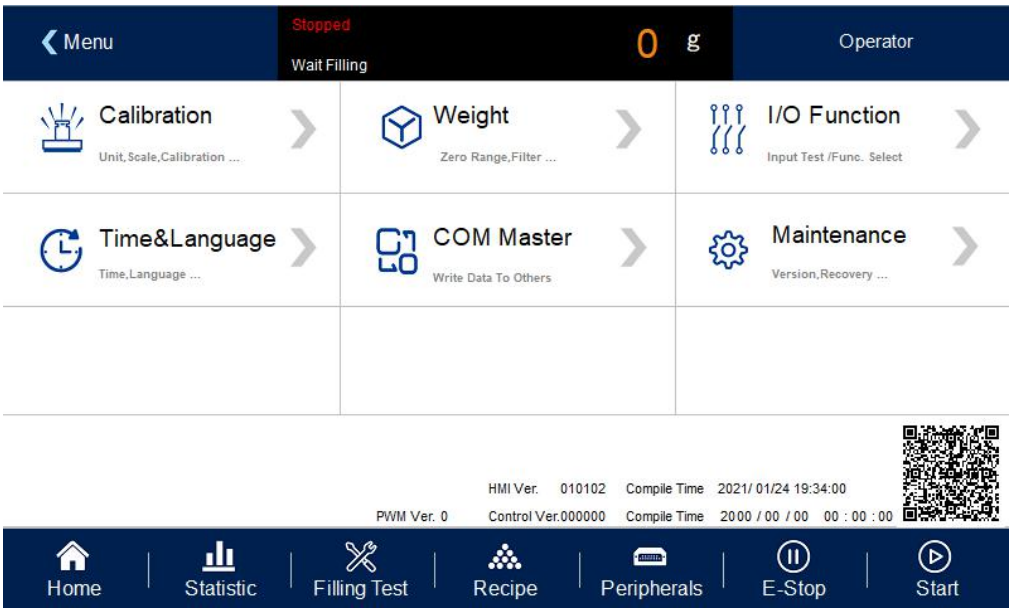
User level	Permission
Operator	Can refer all paracontrollers
	You can set part of the quantitative paracontrollers and process paracontrollers of the formula paracontrollers, switch test, U disk data export.
	You can set batch on the main interface, clear the current formula accumulation, the current user accumulation, and operate the shortcut keys on the main interface.
Administrator	All operations are not restricted.
	Can calibrate the scale, set the weighing paracontrollers, set the formula paracontrollers in the scale structure paracontrollers and adaptive, over and under difference, drop correction and fine moving function paracontrollers, I/O Module definition, set the language and time, modify the host mode paracontrollers.
	Opened peripheral paracontrollers can be modified.

Permission description：

- Controller default operator ID Login
- To switch permissions, you can click the paracontroller item that needs permissions, and enter the password of the corresponding administrator or system administrator in the pop-up box to log in successfully
- Click the paracontroller item that needs permission, and the current user's password can be changed in the pop-up box.
- U In the 【Style Settings】 paracontroller of 【System Maintenance】, set the permission exit time, which is used to limit the login duration of administrators and system administrators. When the permission exit time reaches, the privileges of the current administrator or system administrator will be returned to the operator privileges.
- 【Style Settings】, 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

Press menu，can refer and modify paracontrollers.



- Click paracontroller, enter current paracontroller to check, set paracontroller.
- Press [return] to exist current interface and return to the previous interface.

Menu	**Paracontroller item**	**paracontroller list**	**Paracontroller Description**
Menu	Calibration	weight calibration	Performs calibration operation for calibrating the controller weight value
		Material calibration	Perform calibration operation to calibrate controller weight value
	Weight paracontroller	Zero range/filter lever setting	Set weight para, such as Zero range, stable para.
	I/O Module	Input Define	Define the meaning of the controller input port
		Output Define	Define the meaning of the controller output port
	Time and Language	Language Setting	Default Chinese, English optional.
		Time Setting	Set screen time.
	Host computer	Computer	Set computer mode paracontroller.

	mode	communicatio n	
	Motor	Filling Paracontroller	Set filling related paracontrollers
		Bag Clutch paracontroller	Set the relevant paracontrollers of the bag clutch
		Discharge paracontroller	Set discharge related paracontrollers
	System maintenance	Scale	Set scale structure, working mode,etc
		Communicatio n setting	Set serial port, Ethernet、print etc.
		Logic edit	Auxiliary logic paracontroller:6 group output logic paracontroller
		Peripheral ON/OFF	Set Peripherals paracontroller ON/OFF
		Factory default	Set paracontrollers factory default and backup.
		Hardware test	Test input and output connection.
		Style setting	Set sreensaver timer
		Software upgrade	Software upgrade

4.1 Calibration

The calibration scale is the calibration of the controller. When the **GMC-P7** bagging controller or any part of the weighing system is changed for the first time and the current equipment calibration paracontrollers cannot meet the user's requirements, the controller should be calibrated. The calibration scale paracontroller directly affects the weighing result of the controller. To prevent personnel from mis operation, the Technician and the administrator are required to log in to calibrate the controller (select the identity login in the [User Login] option).

The calibration scale paracontroller of the national standard symmetrical heavy controller requires password protection. Therefore, the password must be entered correctly when entering the calibration paracontrollers (initial password: **000000**); the calibration password is changed in the “Password Management” item of [System Information]. .

In calibration interface, support two method: weight cal and material cal. Steps as follow:

Calibration scale paracontroller	**paracontroller**	**Description**
Weighing paracontroller	**1** unit	Initial value: **kg** ; **g/kg/t/lb is**available.
	2. Decimal point	Initial value: **000; 0 to 0.0000** five kinds of options.
	3. Resolution	Initial value: **1** ; **1/2/5/10/20/50** six optional .
	4. Full Scale	Initial value: **100.00** ; The range is less than or equal to the minimum division × **10 0000** can be set .
Weight Calibration	The function of weight calibration is to use the weight calibration method in the field.Here are the steps: Step 1: Select weighing paracontrollers such as unit, decimal point and indexing value according to the demand. Step 2: Empty the bucket and click "Zero Calibration".This step is the zero point of calibration, the requirements are: the measuring bucket is empty, the scale body is stable. Step 3: Put weights on the weighing table. When the weighing table is stable, click [Weight Calibration], input the weight of weights in the bullet frame, and click OK to complete the calibration of weights.	
Material calibration(Only for With Weighing Hopper mode)	Material calibration function is in the field is not convenient to use the weight of the calibration method.Here are the steps: Step1: Empty the scale platform, wait for the millivolt to stabilize, and click "Zero calibration".This step is the zero point of calibration, the requirements are: the measuring bucket is empty, the scale body is stable. Step2: Click "Manual Filling", then the filling door will open, add material to the controllering bucket, click "Manual Filling" again to close the filling door.(If the manual filling time (Step2 time setting is manual filling time) is not set to 0, wait for the manual filling time to arrive, then automatically close the filling door) Step3: Click [Calibration of Unloading].When the discharge door opens, the background will record the current relative millivolt.Weighing and recording the weight of discharged material. Step4: Click [Material Calibration], enter weighing data, and click OK.Material calibration is finished.	

4.2 Recipe paracontrollers

Press recipe in Menu, enter 20 recipes choose interface, display recipe ID, name and

target value.

- Click recipe ID, can swift recipe ID.
- Click recipe enter paracontrollers display
- Click upper left to return to the upper level interface.

Recipe paracontroller item	paracontroller	Description
Target	Used to set the bagging weight value related paracontrollers	
	1. Target	Quantify the target value.
	2. Coarse Flow Remains	In the quantification process, if the weighing value ≥ the target value - Coarse Flow Remains, Coarse Fill is turned off.
	3. Medium Flow Remains	In the quantification process, if the weighing value ≥ the target value - Medium Flow Remains, Medium Fill is turned off.
	4.Free Fall	In the quantification process, if the weighing value ≥ the target value – Free Fall, Fine fill is turned off.
	5. Near Zero Band	In the quantification process, if the weighing value ≤Near Zero Band, Discharge Delay Timer is started.
	6. COMP. Inhibit Timer(Co-F)	At the beginning of the value, in order to avoid overshooting without weight judgment during this time, Co-F has been effective.Initial value: 0.9;Range: 0.0~99.9.(unit: s)
	7. COMP. Inhibit Timer(Me-F)	After the end of Co-F, in this period of time, in order to avoid overcharging without weight judgment, Me-F has been effective.Initial value: 0.9;Range: 0.0~99.9.(unit: s)
	8.COMP. Inhibit Timer(Fi-F)	After Me-F, in this period of time, in order to avoid overcharging without weight judgment, Fi-F has been effective.Initial value: 0.9;Range: 0.0~99.9.(unit: s)
Time paracontroller	Used to set the delay timer related paracontrollers of the filling process	
	1. Filling Start Delay	In with hopper mode, when the quantification process starts,after the delay time, the controller will stable and zeroing (if it does not meet the Zero Interval condition, it will not stable and not zeroing), and then start the filling process; In no hopper mode, after lock bag is finished, after the delay time, the controller is to be stable and tare. Initial value: **0.5**; Range: **0.0~99.9**. (Unit: **s**)
	2. Result Waiting Timer	Result Checking Mode chose “Delay Timer”, after the fine filling is turned off (or the Over/Under is turned on, the Over/Under alarm is finished), quantification process is

		started, and the holding time is passed, and the quantification process is finished, enter to next process. Initial value: **0.5**; Range: **0.0~ 99.9**. (Unit: **s**)
	3. Bag Locked Delay Timer	After the clutch bag signal is given, after the delay, controller judges that the bagging operation is completed. Initial value: **0.5**; Range: **0.0~99.9**. (Unit: **s**)
	4. Unlock Bag Pre-Delay Timer	After with hopper mode discharge is completed, the unlock bag signal is output after the delay time; After the no hopper mode setting (patting bag) is completed, the unlock bag signal is output after this delay. Initial value: **0.5**; Range: **0.0~99.9**. (Unit: **s**)
	5. Discharge Delay Timer	During the discharge process, when the weight value of the weighing hopper is less than the Near Zero Band, the delay is started, when delay time is finished, discharge signal is closed. Initial value: **0.5**; Range: **0.0~99.9**. (Unit: **s**)
	6. Auto Zero Interval	How many times the packaging process has been completed and then reset once.When entering the running state, the controller is not reset during the first packaging process. Initial value: 0; Range: 0 ~ 99. (Note: This paracontroller is only valid for with hopper mode)
	7.Result Checking Mode	Stable value: After the fi-fo is turned off, the weight is stabilized and the set value process is completed. Delay setting: After the fi-fo is turned off, the fixed value is completed after the fixed value is maintained. Initial value: a stable value.
	8. Result Holding	On/Off is optional; set to “On”, the weight display remains unchanged after the end of the set time, and the weight changes again after the discharge starts. Initial value: off.
	9. Manual Unlock bag I/O	I/O optional, when set to on, running, need manal to control unlock bag. Initial value: off.
Adaptive	Used to set adaptive relevant paracontroller	
	1.Adaptive ON/OFF	Adaptive function, automatically adjust the coarse, medium and fine speed of the controller in the running process after the ON/OFF is turned on. Optional ON/OFF, off, double speed, triple speed.

		Initial value: off. (note: 1. All Remains must be zero before normal use. 2. If Auto Free Fall Correction and the adaptive function are opened at the same time, the Auto Free Fall Correction will be closed forcibly. 3. When the first balance is self-adaptive, the balance body must be stable and the current weight is zero.)
	2.Adaptive Level	The higher the level, the coarseer the filling speed, the lower the accuracy. Initial value: 3; Range: 1 ~ 5.
	3.Paracontroller updated ON/OFF	When opened, the change value of Coarse, Medium,Fine Flow Remains will be updated to the value of quantitative paracontroller;When off, quantitative paracontroller values cannot be updated.
Auto Free Fall Correction	Used to set Auto Free Fall Correction relevant paracontrollers	
	1. Auto Free Fall Correction	The drop value is the weight value that has not fallen into the measuring hopper after the fine filling signal is turned off. The drop correction is corrected according to the actual blanking value as required. (Note: If the drop correction and adaptive functions are turned on at the same time, the drop correction function is invalid)
	2. Reference Samples PCS	The controller averages the difference of the set number of times as the basis for the drop correction. Initial value: **1** ; Range: **1 to 99 .**
	3. Correction Effective Range	The controller averages the difference of the set number of times as the basis for the drop correction. Initial value: **1** ; Range: **1 to 99 .**
	4. Correction Percentage	The magnitude of each drop correction. Three ranges are available in **100% , 50% , and25%** . Initial value: **50 %** .
Over/ Under	Used to set Over/Under relevant alarm paracontroller	
	1.OVER/UNDER ON/OFF	“On / Off” is optional. When this paracontroller is set to “On”, the quantification process judges the Over/Under.
	2. OVER/UNDER Pause	“On / Off” is optional. When it is set to “On”, when the quantitative process is over or under, controller pauses and waits for the user to process. I/O Module enter Emergency Stop, returns to the stop state,

		and clear alarm; or I/O Module enter clear alarm, continue quantitative process.
	3. OverLimit Value	In the quantification process, if the weighing value ≥ the target value + Over value, it is judged as Over. Initial value: **0**.
	4. Under Limit Value	In the quantification process, if the weighing value ≤ target value – Under value, it is judged as Under. Initial value: **0**.
	5. Compensation ON/OFF	Set the Compensation ON/OFF On: Finely add the fill according to the number of fills. Off: Do not replenish when there is a shortfall.
	6. Compensation Times	When the quantitative process is judged to be inferior, the fill is finely added according to this value. Initial value: **1** ; range **1~99** .
	7.Flow-ON Times	When filling the output, the effective time is added finely during an on-off cycle **.** Initial value **: 0.5** ; range: **0.0 to 9 9 .9** . (unit**s**)
	8.Flow-OFF times	When filling an output, a pass off the cycle time has no effect on **chronic.** Initial value **: 0.5** ; range: **0.0 to 9 9 .9** . (unit**s**)
Jog Flow Paraco ntroller	Used to set manual fine filling related paracontrollers	
	1. Jog Flow ON/OFF	"On / Off" is optional. When set to "On", the controller is finely added and jogged. Initial value: off.
	2. Jog Flow-ON Timer	When the jog output is finely added, the effective time is added finely during an on-off cycle **.** Initial value **: 0.5** ; range: **0.0 to 9.9** . (unit **s**)
	3. Jop Flow-on Timer	When the jog output is finely added, the inactive period is finely added during an on-off period **.** Initial value **: 0.5** ; range: **0.0 to 9.9** . (unit **s**)

4.2.1 Scale body structure paracontrollers

The controller provides 5 kinds of scale structure, with hopper, without hopper, ton bag, valve port and PLC mode.Select different scale structure, the formula paracontrollers show different paracontrollers, the specific scale structure paracontrollers are shown as follows

With Hopper Paracont	Used to set the relevant paracontrollers of with hopper scale mode	
	1. Filling Combination	When there is a hopper scale structure, the unlock bag is unloaded several times. If it is **0**, the controller

roller	Times	discharges directly after the filling is completed without judging whether the pocket is valid. Initial value: **1**; Range: **0 to 99**.
Ton package scale Paracontroller	Used to set the relevant paracontrollers of ton bag scale mode	
	1. Delay time of hanging bag	The bag delay time until the bag is completed . Initial value **: 0.5** ; range: **0.0 to 99.9** . (unit **s**)
	2. Air Blow mode	Before rise delay air blow: air blow output valid，hanger rise output is valid. After rise delay air blow, after hanger output continue hanger rise delay time starts air blow. Initial value:Before Rise delay starts blowing
	3. Blowing timer	Blowing timer Initial value **： 0.5**； range **： 0.0～99.9**。（ unit **s**）
	4. Return valve mode	Close the return valve after filling: after closing the fine fill, the return valve output is invalid. Close return valve after bag unlockning: return valve output is invalid after bag unlockning. Initial value: Close the return valve after filling.
	5. Reset time of hanging bag	When the paracontroller is not set to 0, after filling is completed, the output of the bag is invalid and continues to be valid after this time. Initial value: 0.0;Range: 0.0 ~ 99.9.(unit s) Note: ☞the reset time of the lifting bag shall be longer than the delay time of the lifting bag before the reset is valid. &Controller operation first scale needs to manually give a bag signal. ③ Paracontroller is set to 0, controller before each start charging, need punching bag signal.
	6. Hanger control mode	Optional automatic rise, automatic fall;Automatic rise, manual down;Manual up, automatic down;Manual up, manual down. Default: auto up, auto down
	7. Delay Before Hanger Rise	This delay is executed after the rising signal is sent. Initial **value: 5.0;** range: **0.0 to 99.9.** (unit **s**) Note: only valid at Air Drive-unlimit space mode.
	8. Delay Before	This delay is initiated after the quantitative delay has

Hanger Drop		expired. Initial **value: 5.0;** range: **0.0 to 99.9.** (unit **s**) Note: only valid at Air Drive-unlimit mode.
9. Hanger Rise Overtime		The maximum waiting time for the controller hanger in place. Initial **value: 5.0;** range: **0.0 to 99.9.** (unit **s**) Note: only valid at Motor-Dual-Limit/Air Drive-Dual-Limit mode.
10. Hanger Drop Overtime		The maximum waiting time for the controller hanger to drop . Initial **value: 5.0;** range: **0.0 to 99.9.** (unit **s**) Note: only valid at Motor-Dual-Limit/Air Drive-Dual-Limit mode.
11. Decouple d up	**a**. Decoupled up I/O	ON: When is on. OFF: When is off. Initial value:OFF
	b. Delay before decoupling	When is on, after decoup, need to delay the time hanger to rise. Initial value:0.0s Range: 0.0~99.9 (unit s)
	c. Decoupling rise time	When the rise I/O is on and the rise support output needs to last for this time after the rise is executed Initial value:0.0s Range: 0.0~99.9 (unit s)
	d. Decoupling rise pause time	When the rise I/O is on, and after the decoupling rise is over, it is necessary to wait for the time before descending. Initial value:0.0s Range: 0.0~99.9 (unit s)
12. Uncoupled alarm I/O	**a**. Uncoupled alarm I/O	ON: Uncoupled alarm I/O is ON. OFF: Uncoupled alarm I/O is OFF Initial value: OFF
	b. Decoupling alarm conveyor reversal time	The uncoupled alarm I/O is on. When the uncoupled alarm is complete, the conveyor will perform the reversal immediately for the duration. Initial value:0.0s Range: 0.0~99.9 (unit s) (Set to 0: means the conveyor does not reverse)

		c. Weight value of decoupling alarm	The uncoupled alarm I/O is on. If the current weight is greater than the value of the decoupling alarm during the period of decoupling ascending, controller will output the decoupling alarm signal. Initial value:0, range: 0~Maximum range
Valve Scale Paracontroller	Used to set the valve scale mode related paracontrollers		
	1.Delay Before Lifting Bag		The delay time before the bag is started at the same time when the unlock bag starts to start . Initial value **: 0.5** ; range: **0.0 to 99.9** . (unit **s**)
	2. Lifting Bag Timer		The time is started after the delay timebefore the bag is lifted , and the bag signal output is valid. After the time is over, the bag signal output is invalid. Initial value **: 0.5** ; range: **0.0 to 99.9** . (unit **s**)
	3. Delay Before Pusing Bag		When the unlock bag start delay starts, the delay time before pushing the bag is started at the same time. Initial value **: 0.5** ; range: **0.0 to 99.9** . (unit **s**)
	4. Pushing Bag Timer		The time is started after the delay timebefore pushing the bag , and the push bag signal output is valid. After the time is over, the push bag signal output is invalid . Initial value **: 0.5** ; range: **0.0 to 99.9** . (unit **s**)
PLC paracontroller	Used to set PLC mode related paracontrollers		
	1. PLC-OverLimit Value		When the weighing value > target value + excess value, the out-of-tolerance output is valid Initial value: **0.00** ; range: **0.00~100.00 .**
	2. PLC-UnderLimit Value		When the weighing value <target value - under-difference, the under-output is valid Initial value: **0.00** ; range: **0.00~100.00 .**
	3. PLC-UpperLimit Value		When the weighing value > upper limit value, the upper limit output is valid Initial value: **0.00** ; range: **0.00~100.00 .**
	4. PLC-LowerLimit Value		When the weighing value is < lower limit, the lower limit output is valid. Initial value: **0.00** ; range: **0.00~100.00 .**

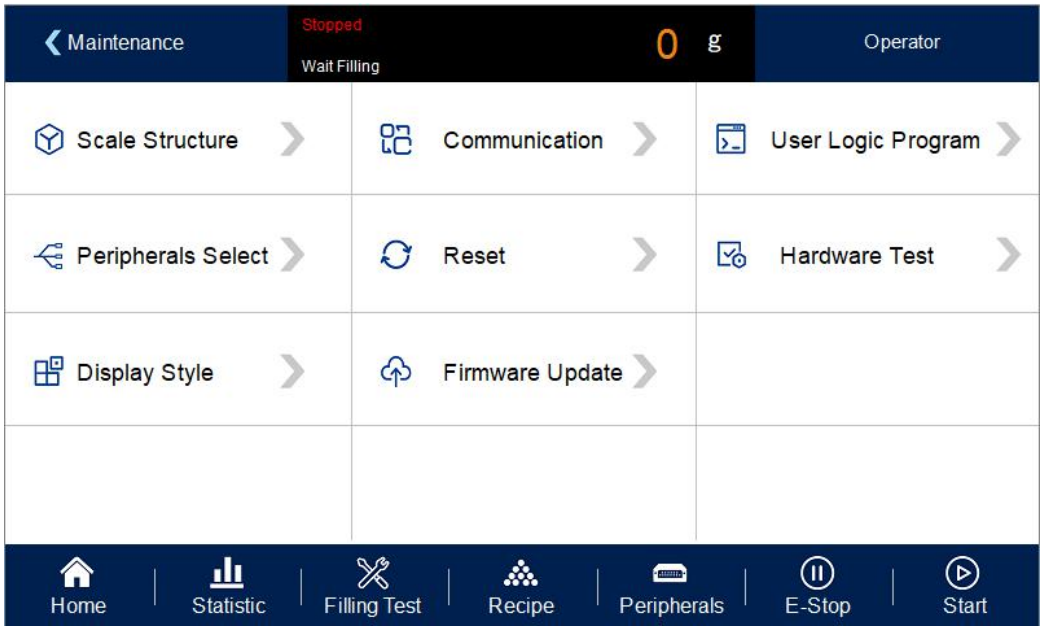
4.3 Weight paracontroller

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

Sys&Com	paracontroller		Description
Weight Paracontroller	**1.** Zero Range		The range can be cleared **.** Initial value: **50** ; Range: **1 to 99 (** % of full scale) .
	2. Stable Range / Timer		During the judgment time, the weight change range is within this set value and the controller judges that the scale is stable. Initial value: **2** ; Range: **0 to 99 (d)** . First value: **0.3; range: 0.1 to 99.**
	3. Zero Track Range / Timer		The weight value is within this range and the controller is automatically cleared.When it is **0** , zero tracking is not performed. Initial value: **0**; range: **0 to 9 (d)**. First Value: **20; range: 0.1-9 9.9.** (unit **s**)
	4.Power-Up Zero		On / off is optional. When it is "on", the controller will automatically perform the clear operation when the power is turned on (the weight inside the scale bucket meets the clearing range). Initial value: off
	5. A/D Sampling Rate		**A/D** sampling rate. **120** times / sec, **240** times / sec, **480**times / sec, **960** times / sec. Initial value: **240** times / sec.
	6. Stop Digital Filter level		Stop Digital Filter level Initial value：**7**；**range 0~9**。
	7. Filter Paracontroller	**a**. Dynamic Filter	During the bagging process, whether to perform the filter operation ON/OFF and set "On", the following three paracontrollers are valid. Initial value: on.
		b. Advance Filter ON/OFF	On/off optional, secondary filtering based on digital filtering. Initial value: off.
		c. Filling Filter Level	Filter paracontrollers during filling: 9: The filtering effect is the strongest.

			Initial value: 4; Range: 0 to 9.
		d. Waiting Process Filter	Filter paracontrollers during the setting process: 9: The filtering effect is the strongest. Initial value: 7; Range: 0 to 9.
		e. Dischange Process Filter	Filter paracontrollers during unloading: 9: The filtering effect is the strongest. Initial value: 1; Range: 0 to 9.
	8. Running Stable Timeout		Initial value: 0.0 ; range: 0 .0 ～ 9 9.9 .(unit s)

4.4 System Maintenance



4.4.1 Weigher structure

Sys&Com	paracontroller		Description
Weigher Structure	**1.** Valve Scale		There are hopper bagging / no hopper/ PLC / big bag / valve port bagging selection available. Initial value: There is a hopper bagging.
	2. With hopper scale paracontroller setting	**a**.Working Mode	Optional single scale , interlock A, interlock B. Initial value : single scale .
		b.Filling control mode	Single filling/comb filling；Initial value：Comb filling

			Comb filling： Co-F plus Co-F, Me-F and Fi-F filling port at the same time filling;Add medium and small filling port at the same time filling;Fine time small filling port filling Single filling: Co-F large filling port filling; Me-F Add when the filling port filling; Fi-F small filling port filling.
		c. Filling Mode	0, pneumatic mode; 1 , stepper motor filling; 2 , ordinary motor mode.
		d. Lock/Release Mode	0, pneumatic mode; 1 , stepper motor；2、MotorDrive Dual-Limit；3、MotorDrive Single-Limit Default：0 pneumatic
		e. Discharge Mode	Initial value: **0** pneumatic discharge; Optional: **0** : pneumatic mode ; **1** : Stepping motor unloading; **2** : motor single limit discharge; **3** : motor double limit discharge; **4** : The motor rotates in one direction.
		f. Manual Unlock Bag ON/OFF	Optional on/off;Set to "on", in operation, need to manually control unlock bag. Initial value: off.
		g. Realtime Detecting When Discharge	Optional on/off;When "on" is selected, the limit signal is detected in real time;When "off", the limit signal is detected only when filling is started. Initial value: off. (Note: discharge mode is valid in motor mode)
	3. Without hopper scale paracontroller setting	**a**. Working Mode	Optional single scale , interlock A, interlock B. Initial value: single scale .
		b. Filling Mode	Gross filling/Net filling Initial value：Net filling
		c.Filling control mode	Single filling/combination filling is optional;Initial value: Combination filling.

			Combination filling: coarse adding large, medium and small filling port at the same time;Add medium and small filling port at the same time filling;Fine time small filling port filling. Separate filling: coarse adding large filling port filling;Add when the filling port filling;Fine time small filling port filling.
		d. Filling Mode	0, pneumatic mode; 1 , stepper motor filling; 2 , ordinary motor mode.
		e. Lock/Release Mode	0, pneumatic mode; 1 , stepper motor；2、MotorDrive Dual-Limit；3、MotorDrive Single-Limit Default：0 pneumatic
		f. Unlock bag switch is allowed in filling	Optional on/off;Set to "on", no bucket scale mode, after starting, it is allowed to unlock bags in filling.Set to "off". After starting, it is not allowed to unlock bags in filling Initial value: off.
		g. Manual unlock bag ON/OFF	Optional on/off; Set to "on", in operation, need to manually control unlock bag. Initial value: off.
		h. Bracket control ON/OFF	Optional on/off;Set to "on". In operation, the movement mode of the bracket needs to be controlled manually. Initial value: off.
		i. Bracket movement mode	Optional pneumatic - infinite/electric - double limit/pneumatic - double limit. Initial value: pneumatic - infinite bit.(Note: Paracontrollers can be seen when the support control switch is on)
		j. Double scale unlock bag mode	Different Unlock Bag/Simultaneous unlock Bag 1/ Simultaneous unlock Bag 2 are optional. Initial value: unlock bag at different times. unlock bag at different time: unlock bag after finishing packing, when A/B scales are all unlock bag, the controller controls the signal

			output of conveyor and starts the conveyor. Simultaneously unlock bag 1: in the normal mode, the filling of one scale has been completed and the filling of the other has not been completed. After the completion of the other scale, both scales are loosing bag at the same time. If a scale has finished filling, the other scale is not in the bag (filling) state, then do not wait for another scale, this scale directly unlock bag. At the same time, unlock bag 2: for the coarse mode, this mode defaults to scale A in the front and scale B in the back.After filling, scale A will not judge whether B is finished or not, and will unlock the bag directly. After the completion of filling, B should judge whether A is in the state of bag clamping (filling). If A is filling, B should wait for A to finish adding and unlockn the bag.If A is not filling, B does not have to wait to unlock the bag. (Note: the working mode is interlocking scale A and interlocking scale B, paracontrollers can be seen.)
		K.Allow Unlock Bag When Fill ON/OFF	set ON, without hopper mode, controller allow manual loose bag when filling, after loose bag controller re-enter filling wait mode. Inital value: OFF.
	4. Ton scale paracontroller setting	**a**.Filling mode	Gross filling/Net filling.Initial value：Net filling
		b. Filling control mode	Single filling/combination filling is optional;Initial value: Combination filling. Combination filling: coarse adding large, medium and small filling port at the same time; Add medium and small filling port at the same time filling;Fine time small filling port filling. Separate filling: coarse adding large filling port filling;Add when the filling port filling;Fine

			time small filling port filling.
		c. Filling Mode	0, pneumatic mode; 1 , stepper motor filling; 2 , ordinary motor mode.
		d. Lock/Release Mode	0, pneumatic mode; 1 , stepper motor；2、MotorDrive Dual-Limit；3、MotorDrive Single-Limit Default：0 pneumatic
		e. Manual unlock bag ON/OFF	Optional on/off; Set to "on", in operation, need to manually control unlock bag. Initial value: off.
		f. Bracket movement mode	Optional pneumatic - infinite/electric - double limit/pneumatic - double limit. Initial value: pneumatic - infinite bit.(Note: Paracontrollers can be seen when the support control switch is on)
		g. Hanger bag movement control ON/OFF	Optional on/off;Set to "open", ton bag scale mode, after starting, allowed to lift bag, not allowed to take off the bag. Initial value: off.
		h. Hanger bag inverse logic ON/OFF	Optional on/off;Set to "on", in the ton bag scale mode, when the bag output is effective, the output of switching quantity is invalid; when the bag output is invalid, the output of switching quantity is effective. Initial value: off.
		i. Tare weight detection switch	Optional on/off; When set to "on", the controller will return to the stop state without filling to a fixed value in the operation of the controller. When it is started again, it does not need to remove the skin and start filling directly. Note: This function will only record the tare value when the current weight is greater than 0 and it is started again. Initial value: off.
	5. Valve scale	**a**.Filling mode	Gross filling/Net filling.Initial value：Net filling

	paracontroller setting	**b**.Filling contril mode	Sigle filling/Comb filling：Initial value：Comb filling Combination filling: coarse adding large, medium and small filling port at the same time;Add medium and small filling port at the same time filling;Fine time small filling port filling. Separate filling: coarse adding large filling port filling; Add when the filling port filling; Fine time small filling port filling.
		c. Filling Mode	0, pneumatic mode; 1, stepper motor filling; 2, ordinary motor mode.
		d. Lock/Release Mode	0, pneumatic mode; 1 , stepper motor；2、MotorDrive Dual-Limit；3、MotorDrive Single-Limit Default：0 pneumatic
		e. Manual unlock bag ON/OFF	Optional on/off; Set to "on", in operation, need to manually control unlock bag. Initial value: off.

4.4.2 Communication Setting

GMC-P7 Two serial communication interfaces can be provided.See Section 2.5 for the definition of serial port output; correct setting of port paracontrollers can be used for communication.

Sys&Com	paracontroller	Description
Serial port（Serial port **1**（**232**）、Serial port **2**（**485**））	**1.** Communication ID	Initial value: **1**; **1 ~ 9 9** optional.
	2.Communication Mode	Initial value: **Modbus-RTU**. **Modbus-RTU** / Print / Continuous Mode / **MD-R** (compatiblewith version **01.**) isoptional.
	3. Baudrate	Initial value: **38400** ; **9600/19200/38400/57600/115200 optional.**
	4. Data Format	Initial value: **8-E-1 (8** -bit data bit **-**even parity **-1** stop bit) ; **8-E-1/8-N-1/7-E-1/7-N-1 is** optional.
	5. **Modbus** Dword Format	**Modbus** communication display mode: Initial value: **AB-CD** (high word first);

		AB-CD (high word first) / **CD-AB** (low word first) optional.
Ethernet Interface	**1.** Communication Mode	Fix：**Modbus-TCP**。
	2.modbus-TCP Dword Format	Initial value **AB-CD.** Range：**AB-CD**（high word first）**CD-AB**（low word first）
	3. Server Port	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 paracontrollers	**1.** Auto Print	On/Off is optional; when "On" is selected, the package result will be printed out automatically every time the package is completed (the serial port should be selected as "Print"). Initial value: off.
	2. Printer Format	Initial value: **24** columns of printing; **24**columns of printing / **32** columns of printing.
	3. Printing Language	Initial value: Chinese; Chinese / English optional.
	4. Printing Line Nos.	The number of lines after the print is completed. Initial value: **3**; **0~9** optional.

4.4.3 User Logic

Auxiliary logic programming function, up to 6 sets of auxiliary logic trigger signals can be defined, and the effective time and output port after the auxiliary logic signal is triggered can be set. The simple logic signal output can be configured to control other auxiliary devices, and 6 sets of auxiliary logic signals. They can also control each other.

Under the auxiliary logic programming interface:

Auxiliary logic(1~ 6) Programming paracontroller	paracontroller	Description
1.Logic Type (1-6)	CLOSE	The type of auxiliary logic programming

	Delay ON	signal is selected based on the logic to be implemented.
	Delay Off	
	Delay ON And OFF	
	OFF-ON,Edge Trigger	
	ON-OFF,Edge Trigger	
2. User Logic **(1-6)** Trigger Define	Self-Define Trigger (default)	After setting any of the **1~ 12** channels as the trigger signal, the input port will be fixed as the trigger signal.
	IN port **1~12**	Set any of the **1~ 1 2** input ports as the trigger signal, then the input can be either the trigger signal or the function signal of the input port.
	Output definition	After the trigger signal is set to "an internal function signal", the trigger output is performed according to the function signal.
	> = or < = weight Value Trigger	After the trigger condition is set , the current weight value is compared with the set weight threshold , and theoutput is triggered when the condition is met .
3. Logic(1-6) Trigger Input Port	**IN1~12**	Initial value: no definition. Select the digital input port corresponding to the function signal. The input port " **0 is** not defined" means that the function is not defined.
4. Logic(1-6) Output Port	**OUT1~16**	Initial value: no definition. Select the digital output port corresponding to the function signal. The output port " **0 is** not defined"means that the function is not defined.
5. Logic(1-6) Delay ON Timer	Unit **s**	Initial value: **0.0** ; Range: **0.0~99.9** . After the trigger signal is valid, the logic output signal is valid after the delay.
6. Logic(1-6) Delay OFF Timer	Unit **s**	Initial value: **0.0** ; Range: **0.0~99.9** . After the trigger signal is invalid, the logic output signal will be invalid after the delay.
7. Logic(1-6)	Unit **s**	Initial value: **0.0** ; Range: **0.0~99.9** .

Output ON Timer		The duration after the logic output signal is valid, and becomes invalid after the end of the time.
8. Logic(1-6) Trigger weight	Unit **KG**	Initial value: **0.0 0** ; Range: **0.0~ 100.00** . Set the weight value, the current weight and the threshold weight comparison , and trigger when theweight value trigger condition is met .(When the trigger select "> =, or <=weight value" valid).

4.4.3.1 Delay on

● ● When the delay is turned on [Custom Input Port Trigger], the operation is as follows:
1. Set paracontrollers and ON/OFF quantity: type selection [delay turn-on], trigger signal If [Custom trigger input] is selected, the trigger input port is defined as " 1 " (you can see that the ON/OFF input port 1 is displayed as "auxiliary logic" Trigger input 1 "), the logic output port is defined as " 1 " (you can see that the digital output port 1 is displayed as "auxiliary logic output 1 "), and the [delay on time] is set to 2 seconds.
2. Execute operation: make the trigger signal input 1 valid, start the delay delay on time, and continue to be valid until the delay on time 2s ends, the logic output signal port 1 output is valid until the trigger signal input 1 is invalid, the logic output Signal port 1 also becomes invalid. See the timing diagram below:

● When the delay is turned on [fixed input port trigger], the operation is as follows:
1. Set paracontrollers and ON/OFF quantity: trigger signal to select "input port 1 " (you can see that the digital input port 1 is displayed as "the original unchanged definition", assuming the original definition is start, the function of input port 1 can be "start" "It can also be "signal trigger"), the logic output port is defined as 1 (the ON/OFF output port 1 can be seen as "auxiliary logic output 1 "), and the [delay on time] is set to 2 seconds.
2. Execution operation: make the trigger signal input 1 valid (starting is also valid, the controller running output is valid), start the delay-on time, and remain valid until the delay-on time is2s , the logic output signal port 1 output is valid. Until the trigger signal input 1 is invalid, the logic output signal port 1 also becomes invalid. The controller will continue to run until an emergency stop signal is given.

● When the delay is turned on [ON/OFF output definition trigger], the operation is as follows:
1. Set paracontrollers and ON/OFF quantity: trigger signal select "Run" (ON/OFF output can define or not define running signal), logic output port is defined as 1 (can see that ON/OFF output port 1 is displayed as auxiliary logic output 1), [Delayed On Time] is set

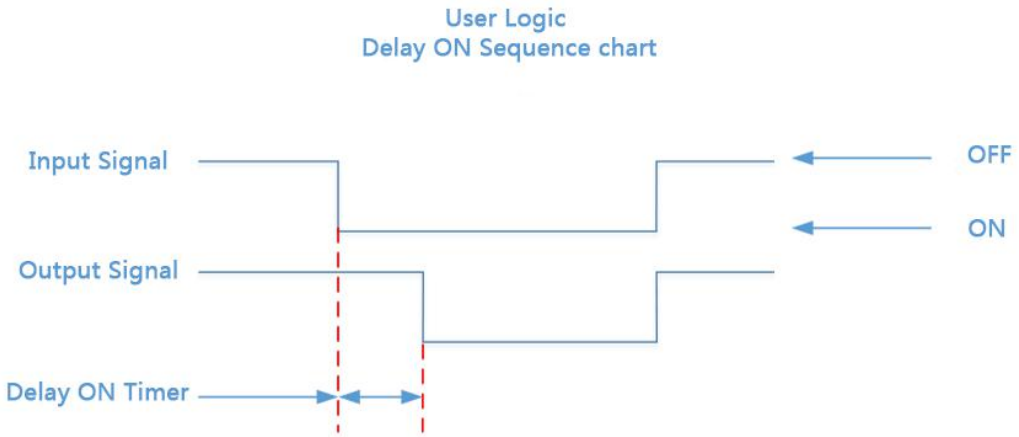
for 2 seconds.

2. Execution operation: After the external input "start", when the "run" output signal is valid, it starts to go [delayed on time], and remains valid until the end of the delay on time 2s , the output of the logic output signal port 1 is valid. The logic output signal port 1 becomes invalid until the "Emergency stop or pause" is valid and the "Run" output signal is invalid.

● When the delay is turned on [> = or < = weight value trigger], the operation is as follows:

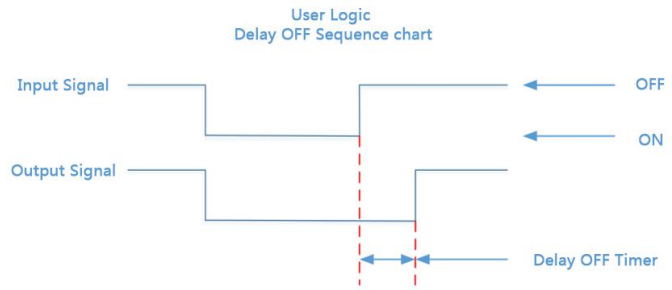
1. Set the corresponding threshold weight, the logic output port is defined as 1 (you can see that the ON/OFF output port 1 is displayed as the auxiliary logic output 1), and the [delayed on time] is set to 2 seconds.

2. Execution operation: current weight value > = or < = logic 1 threshold weight is valid when setting value , start to go [delay on time], it is valid until the end of delay on time 2s , logic output signal port 1 The output is valid until the current weight < or > logic 1 threshold weight setting value is invalid for logic output signal port 1 .



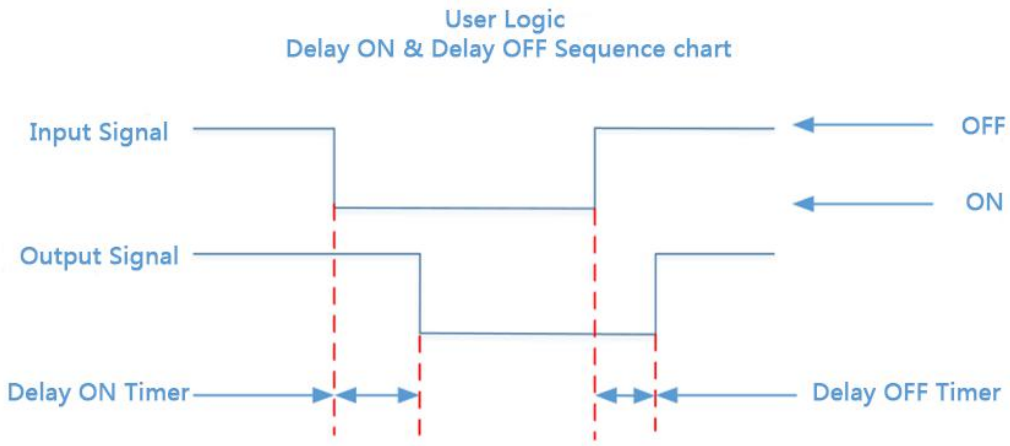
4.4.3.2 Delay off

Related paracontrollers: Type selection [delay disconnect], select [trigger signal], set [trigger input port], [logic output port definition], [delay disconnect time]. Operation Reference "3.8 .1-Delay."Its output function is shown below:



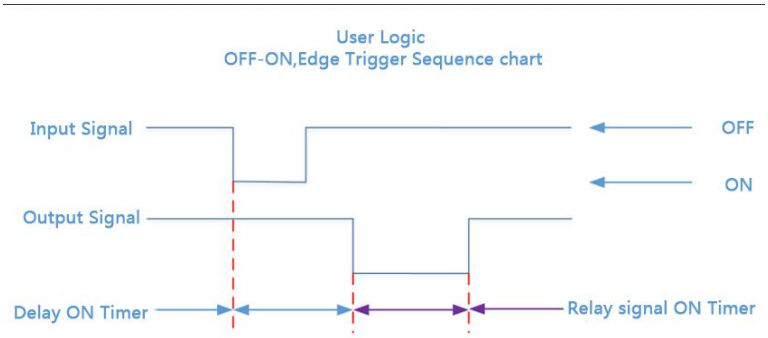
4.4.3.3 Delay on and delay off

Related paracontrollers: Type selection [delay on and delay off], select [trigger signal], set [trigger input port], [logic output port definition], [delay on time], [delayed off time】. Operation Reference "4.4.3.1-Delay." Its output function is shown below:



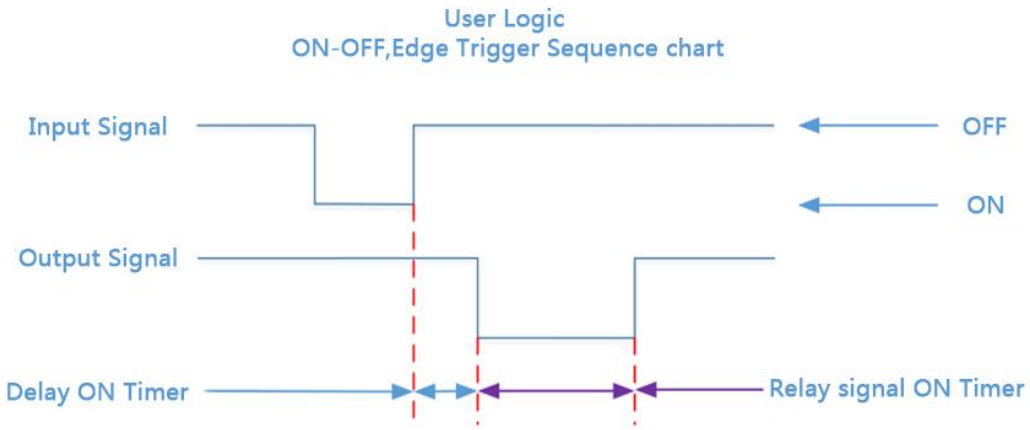
4.4.3.4 Invalid - valid edge triggered

Related paracontrollers: Type selection [invalid - valid edge trigger], select [trigger signal], set [trigger input port], [logic output port definition], [delay on time]. Operation Reference "3.8 .1-Delay." Its output function is shown below:



4.4.3.5 Valid - invalid edge trigger

Related paracontrollers: Type selection [valid - invalid edge trigger], select [trigger signal], set [trigger input port], [logic output port definition], [delay on time]. Operation Reference "3.8 .1-Delay." Its output function is shown below:



4.4.4 **Peripheral paracontrollers**

This paracontroller sets the switch of controller peripheral. If set on, peripheral paracontrollers of the main interface can be set. Refer to Chapter 4.5 for specific peripheral paracontrollers.

Peripherals	paracontroller	Description
Peripherals	**1.** Patting Mode	Bag mode selection; Initial value: Do not pat bag. Optional: With hopper mode: the bag is not available after the bag / set value; No jogging mode: Sign bag / bags after setting Sign / addition in the film bag /bags jog plus values were correctly predicted; T packet mode: Sign bag / bags after setting Sign / addition in the film bag /bags jog plus values were correctly predicted; Port mode: Sign bag / bags after setting Sign / addition in the film bag / bags jog plus values were correctly predicted; PLC mode: Sign bag / bags after setting Sign / addition in the film bag / bags jog plus values were correctly predicted;
	Sewing machine ON/OFF	Whether to turn on the function of bale sewing machine.Optional on and off. When open, the peripheral

		can start to sew the bag, and the paracontrollers of the sew machine can be set.
	Conveyor mode	Selection of conveyor mode: Initial value: Off With bucket/without bucket/valve port scale mode: closed /1 level conveyor optional; Ton bales scale mode: closed /1 level conveyor /2 level conveyor /3 level conveyor optional.
	Coding Device ON/OFF	Whether to enable the coding function.On and off are optional. When on, the peripheral starts coding function and the coding paracontrollers can be set.
	Discharge patting Switch	Whether to open the Discharge patting function.Optional on and off. When on, the external device opens the Discharge patting function, and the Discharge patting paracontrollers 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 peripheral and auxiliary pulse paracontrollers can be set.
	Fill/Discharge overtime alarm	Whether to turn on the timeout alarm function of Fill/Discharge .On and off are optional. When on, this function is enabled by peripheral and timeout alarm paracontroller can be set.

4.4.5 Factory reset

System administrators can restore and backup data through the recovery factory in 【System Maintenance】.

Factory reset	**1.** Reset All (Except calibration)	Click this item to restore all paracontrollers of the controller (except calibration paracontrollers) to factory setting values.
	2. Reset All	Click this to restore all the paracontroller values of the controller to the factory settings.
	3. Reset Calibration Paracontroller	Click this to restore the calibration scale paracontroller value to the factory setting value.
	4. Reset weight paracontroller	Click this to reset weight and scale body paracontroller as factory setting

	5. Reset Recipe Paracontroller	Click this to restore the recipe paracontroller value to the factory setting.
	6. Reset Communication Paracontroller	Click this item to restore communication setting paracontroller value is factory setting value.
	7. Reset Peripherals Paracontroller	Click this item to restore peripheral paracontroller values and peripheral switch to factory setting values.
	8. Reset Motor Paracontroller	Click this item to restore motor paracontroller value to factory setting value.
	9. Reset I/O Function	Click this item to restore I/O Function to factory setting value.
	10. Reset logic edit paracontroller	Click this item to restore logic edit paracontroller to factory setting value.
	11. Execute paracontroller backup	Click controller to backup the current paracontroller setting values.
	12. Recovery From Backup data	Click controller to restore the paracontroller value to the most recent backup value.
	13. Delete paracontroller Backup	Click controller to delete the backup paracontrollers.

4.4.6 Hardware setting

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 port 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 means the connection is abnormal.

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

4.4.7 Style setting

Style setting	**1.** Screen Saver Time	You can set the time when the screen is off. Default: Never;Optional never /60 seconds /10 minutes /30 seconds /5 minutes /30 minutes
	2. Screen Saver	Data rendering style, quick debugging style is optional.Default: data rendering style.
	3. Permission Cancel timer	Set Permission Cancel time
	4. Multi-user login function ON/OFF	Enable multi-user login function, can set the number of users login
	5. Number of users logged in	The multi-user login switch is turned on to set the number of users logging in

4.5 Peripheral paracontrollers

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

Peripherals	paracontroller	Description
Patting Paracontroller	**1**. Patting Mode	Select according to the pat bag mode of the system maintenance peripheral switch
	2. Patting ON Timer	During the on-off cycle of the bag, the bag output valid time. Initial value: **0.5 ;** Range: **0.0~99.9** . (unit **s**)
	3. Patting OFF Timer	In the on-off cycle of the bag, the bag output invalid time. Initial value: **0.5 ;** Range **: 0.0~99.9** . (unit **s**)
	4. Patting Start Delay Timer	After the bag is started, the bag output is valid after this delay time. Initial value: **0.5 ;** Range **: 0.0~99.9** . (unit**s**)
	5. Patting Times(Waiting)	After the fixed value, the number of times the bag is set, the number of times the bag is taken. Initial value: **4**; Range: **0~99** .
	6. Extra ON Timer	Generally used in the anchor bag function. After all the bags are finished, the additional bag output is added once, and the effective time is set to the time.

		The invalid time is “the bag invalid time” . Initial value: **0 .0**. Range: **0.0~99.9**. (unit**s**) (Note: the time when the unlock bag is delayed is not changed, or the **“** lead bag delay” time is started after all the original bag output ends effectively , that is, the effective time of the extra bag output is started after the bag output valid time is over. To achieve the abutment function, the time and the “unlock bag delay” time should be set appropriately, but the time setting shouldgenerally be greater than the “unlock bag delay”, that is, the bag should be unlockned first, then the bag mechanism will rise again) .
	7. Pat bag start up weight 1	Under without hopper,ton bag, valve scale mode are valid, choose Filling medium pat bag mode, current weight must >=pat bag start up weight, starts pat bag. Initial value: **0**; Range: **0 ~** Maximum range
	8. Start-Up Weight **2**	The current weight must be greater than or equal to the starting weight of the racket bag 2 to start the racket bag. Initial value: 0;Range: 0~ maximum range
	9. Start-Up Weight **3**	The current weight must be greater than or equal to the starting weight of the racket bag 3 to start the racket bag. Initial value: 0; Range: 0~ maximum range.
	10. Patting Times(Filling) **1**	Setting paracontroller for the number of petting bags in filling, if set to 0, no petting bags.Note: when the filling process enters the fine filling, force the end of the filling bag, no matter whether the filling bag is completed or not.(After entering the small throw, do not shoot the bag in the middle of filling) The number of raps corresponding to the starting weight of the bag 1 Initial value: 0; Range: 0~99.
	11. Patting Times(Filling) **2**	The number of raps corresponding to the starting weight of the bag 2 Initial value: 0; Range: 0~99.
	12. Patting	The number of raps corresponding to the starting weight

	Times(Filling) **3**	of the bag 3 Initial value: 0; Range: 0~99.
	13.Patting output interface	This can be used to quickly define the output of the patting switching I/O module.
Sewing	**1**. Sewing ON/OFF	The peripheral switch is set to "on" to turn on the function of the bagging machine
	2. Sewing Start Delay Timer	After the sewing machine start ON/OFF is activated, the sewing machine delay time is started . Initial value: **0.5** . Range: **0.0~99.9** . (unit **s**)
	3. **S**ewing ON Timer	After the delay time has elapsed, the sewing machine output is started and the sewing machine output time is continuously output . Initial value: **4.0** . Range: **0.0~99.9** . (unit **s**)
	4. Cutter ON Timer	After the start up of the cutter, start the output of the cutter and continue the output time of the cutter. Initial value: 0.5.Range: 0.0~99.9.(unit s)
	5.Sewing machine anti-shake time	Prevent the abnormal operation of the sewing caused by the photoelectric jitter of the sewing starting.During the de-shaking time, the photoelectric jitter of the baling, but the output of the baling is still valid at this time. Initial value: 0.3.Range: 0.0~99.9.(unit s)
	6. Cutter ON Timer	After the start up of the cutter, start the output of the cutter and continue the output time of the cutter. Initial value: 0.5.Range: 0.0~99.9.(unit s)
	7. Cutter output valid timer	After the start of the cutter, start the output of the cutter and continue to output the valid time. Initial value: 0.5.Range: 0.0~99.9.(unit s)
	8. **IO** function define	This can be used to quickly define the input port of the start and emergency stop of the bagging machine, and the output port of the bagging machine and the thread cutting machine.
Discharge patting paracontroller	1.Discharge patting Switch	The peripheral switch is set to "on" to open the Discharge patting function
	2. Discharge valid time	When the fixed value hold time is, the period from the start of output discharge signal to the start of discharge delay after discharge is completed is the effective

		discharge time.When the unloading duration exceeds this time, it is considered abnormal and the unloading vibration action is started Initial value:**2.0**；range **0.0~9.9**。（Unit **s**）
	3. Discharge ON Timer	Initial value:**0.5**；range **0.0~9.9** （Unit **s**）
	4. Discharge patting OFF Timer	Initial value:**0.5**；range **0.0~9.9** （Unit **s**）
	5. Discharge patting Times	Initial value:**10**；range **0~99**
	6.Discharge patting output port	This can be used to quickly define the discharge vibration output port.
Conveyor paracontroller	**1**. Conveyor mode	When the peripheral switch selects the 1 level conveyor /2 level conveyor /3 level conveyor, the output function of the conveyor is turned on
	2. Conveyor **1** Start Delay Timer	After the delay of the unlock bag, the controller judges that the conveyor is started. Initial value: 0.5 ; range: 0~99.9 . (unit s)
	3. Conveyor 1 Running Timer	Conveyor runtime setting. Initial value: 4.0 ; range: 0~99.9 . (unit s)
	4. Conveyor **2**/**3** Max running Timer	Conveyor **2**/**3** runtime setting. (Note: In the ton scale mode, the paracontrollers of the conveyor level 2 or level 3 can only be seen when the conveyor level is turned on) Initial value：30.0；range：0~99.9。（unit s）
	5. IO function define	Through this, the I/O module related to conveyor can be quickly defined, including manual conveyor 1 forward rotation, manual conveyor 1 reverse, conveyor 2 limit, conveyor 3 limit input port, conveyor 1, conveyor 1 reverse, conveyor 2, conveyor 3 output port
Coding Paracontroller	**1.** Coding Device ON/OFF	On/off optional; set to “on”, the controller has a code output function; Initial value : off.
	2. Coding Start Delay Timer	The pocket is completed, and the output is valid after the delay; Initial value: **0 .5** ; Range: **0.0~99.9** . (unit**s**)
	3. Coding	The effective time of coding;

	Duration Timer	Initial value: **0 . 5** ; Range: **0.0~99.9** . (unit**s**)
	4.Not Allow Fill/Discharge When Coding	On/Off is optional; set to “On”, it is not allowed to start filling (no bucket mode) output or unloading (with bucket mode) output during coding . Initial value : off.
Auxiliary pulse paracontroller	**1.** Auxiliary pulse ON/OFF	The peripheral ON/OFF is set to "on" to enable the auxiliary pulse function
	2. Auxiliary pulse mode	Auxiliary pulse mode 1~4 can be selected according to requirements 0: Pulse mode;1: Level mode. Initial value: 0: Pulse mode.
	3. Auxiliary Pulse 1 Execute Total Timer	Auxiliary Pulse 1 Execute Total Timer. If 0, keeps running. Initial value : **0** ; range : **0.0~999.9** .(unit **s**)
	4. Auxiliary Pulse 1 On Timer	Initial value : **10.0** ; range : **0.0~999.9** .(unit **s**)
	5. Auxiliary Pulse 1 Off Timer	Initial value : **10.0** ; range : **0.0~999.9** .(unit **s**)
	6. Auxiliary Pulse 2 Execute Total Timer	Auxiliary Pulse 2 Execute Total Timer. If 0, keeps running. Initial value : **0** ; range : **0.0~999.9** .(unit **s**)
	7. Auxiliary Pulse 2 On Timer	Initial value : **10.0** ; range : **0.0~999.9** .(unit **s**)
	8. Auxiliary Pulse 2 Off Timer	Initial value : **10.0** ; range : **0.0~999.9** .(unit **s**)
	9. Auxiliary Pulse 3 Execute Total Timer	Auxiliary Pulse 3 Execute Total Timer. If 0, keeps running. Initial value : **0** ; range : **0.0~999.9** .(unit **s**)
	10. Auxiliary Pulse 3 On Timer	Initial value : **10.0** ; range : **0.0~999.9** .(unit **s**)
	11. Auxiliary Pulse 3 Off Timer	Initial value : **10.0** ; range : **0.0~999.9** .(unit **s**)
	12. Auxiliary Pulse 4 Execute Total Timer	Auxiliary Pulse 4 Execute Total Timer. If 0, keeps running. Initial value : **0** ; range : **0.0~999.9** .(unit **s**)

	13. Auxiliary Pulse 4 On Timer	Initial value : **10.0** ; range : **0.0~999.9** .(unit **s**)
	14. Auxiliary Pulse 4 Off Timer	Initial value : **10.0** ; range : **0.0~999.9** .(unit **s**)
Overtimer alarm	**1.** Overtime Checking ON/OFF	Add and discharge timeout judgment ON/OFF. After the opening , the loading and unloading timeout judgment is performed in the running state . Initial value **:** off .
	2 Coarse Flow Overtime	In the running state, after the coarse output exceeds the time, the output timeout alarm is issued and the machine stops. Initial value : **5.0** ; range **0.0~99.9** . (unit**s**)
	3. Medium Flow Overtime	In the running state, after the output is over this time, the output timeout alarm is issued and the machine stops. Initial value : **5.0** ; range **0.0~99.9** . (unit**s**)
	4. Manual Fine Overtime	In the running state, after the fine output exceeds the time, the output timeout alarm is issued and the machine stops. Initial value : **5.0** ; range : **0.0~99.9** .(unit **s**)
	5. Discharge Overtime	In the running state, after the discharge output exceeds this time, the output timeout alarm and stop. Initial value : **5.0** ; range : **0.0~99.9** .(unit **s**)

4.6 Motor paracontroller

When the scale structure is with hopper, no hopper, ton bag and valve port scale structure, the "filling mode", “Lock/Release Mode " and "discharge mode" of the system maintenance paracontroller scale property are set to the motor mode, and the following paracontrollers can be seen.

- Enter the interface of motor paracontrollers from [Menu] - [Motor].
- The unit number on the right side can be switched.

Motor	paracontroller	Description
	1. Filling mode	Initial value: pneumatic filling; Optional: **0**, pneumatic mode; **1** , stepper motor filling; **2** , ordinary motor mode.

Filling paracontroller	**2.** Closing in place signal type		**0** when the signal is valid in place (when the input is valid, the door is considered to be in place). 1 the signal is invalid in place (when the input is invalid, the door is considered to be in place).
	3. Current Filler Motor Cfg ID		Set Current Filler Motor Cfg ID
	4. Filler Gate Close Overtime		Default：**4.0**, Range：**0.0~99.9** （Unit：**s**）
	5. Step Motor Drive paracontroller setting	**a**. Filling frequency	Default：**12000**，Range：**1~50000** （Unit：**Hz**）
		b. Fi-f pulse	Default：**1800**，Range：**1~60000**
		c.Me-f pulse	Default：**4300**，Range：**1~60000**
		d.Fa-f pulse	Default：**7750**，Range：**1~60000**
		e. Manual Fine Flow, Manual Medium Flow, Manual Coarse Flow	Test shortcut key, used to check the device opening status, to quickly adjust the pulse number
		f. Start Frequency	Filling motor Start Frequency。 Default：**2000** Range：**0~50000**。（Unit：**Hz**） （This value cannot bigger than the filling motor frequency）
		g. ACC Time	Filling motor ACC Time Default：**100**，Range：**0~9999** （Unit **ms**）
		h. DEC Time	Filling motor DEC Time Default：**50**，Range：**0~9999**。（Unit **ms**）
		i. IO function define	Options: a) State of filling door opening direction signal：**0** When the signal is invalid, it is the direction of the door opening: when the filling door opening action, the output of the rotation direction signal of the filling stepper motor is invalid, and the output of the direction signal is effective when the closing action；

			1 When the signal is effective, it is the direction of opening the door: when the filling step motor is opening the door, the output of the rotation direction signal of the filling step motor is effective, and the output of the direction signal of the closing action is invalid。 b) Quickly define the input port, filling direction signal and filling pulse output port I/O module in place of filling and closing
		j. Power back to zero frequency	When the power is off and restarted, the filling motor returns to the origin with this frequency. Initial value：**2000**，Range：0~50000。（Unit Hz）
	6. Filling normal motor paracontroller setting	**a**. Fi-F timer	The time required to open the filling door to the Fi-F position. Initial value：**0.2**，Range：**0~99.99** （Unit **s**）
		b Me-F timer	The time required to open the filling door to the Me-F position. Default：**0.4**，Range：**0~99.99** （Unit **s**）
		c.Fa-F timer	The time required to open the filling door to the Fa-F position. Default：**0.8**，Range：**0~99.99** （Unit **s**）
		d. Manual Fine Flow, Manual Medium Flow, Manual Coarse Flow	Test shortcut key, used to check the state of the equipment, to quickly adjust the motor coarse, fine and add time.
		e. Filling door close in place input port	Quickly set the input/output port of filling related I/O module
		f. Filling door output port	
		g Output port of filling door	

Bag Clutch Paracontroller	**3.** Step motor Lock/Release bag paracontroller	**a**. Lock/Release bag mode	Step motor
		b.Release bag dignal mode	**0** In place when the signal is effective (when the input is effective, the door is considered to be in place 1 In place when the signal is invalid (when the input is invalid, the door is considered to be in place)
		c. Lock bag dignal mode	Default：**3.0**, Range：**0.0~99.9**（Unit **s**）
		d. Clutch Lock Frequency	Default：**30000**，Range：**1~50000** （Unit:**Hz**）
		e. Clutch Release Frequency	Default：**20000**，Range：**1~50000** （Unit **Hz**）
		f. Lock bag steps	Default：**12000**，Range：**1~60000** （Unit **Hz**）
		g. Start Frequency	Default：**2000**，Range：**0~50000** （Unit **Hz**）（this value can't bigger than clutch bag frequency）
		h. ACC Time	Default：**200**， Range：**0.0~9999** （Unit **ms**）
		i. DEC Time	Default：**50**， Range：**0.0~9999** （Unit **ms**）
		j.**IO** function define	Optional A) Bag direction signal state: 0 direction signal output is invalid when the bag is clamped: when the bag unlockning mechanism clamps the bag, the rotation direction signal output of the stepping motor of the bag unlockning mechanism is invalid, but the direction signal output is effective when the bag unlockning mechanism clamps the bag; 1. Effectiveness of direction signal output when the bag is clamped: when the bag is clamped unlock, the rotation direction signal output of the stepper motor of the bag is effective, but when the

			bag is clamped unlock, the direction signal output is invalid. B) Quickly define the switching quantity of input port, direction signal and pulse output port of unlock bag in place.
		k. Power on zero frequency	When the power is cut off and restarted, the clutch motor returns to the origin at this frequency. Initial value：**2000**，range：**0~50000**。（Unit **Hz**）
		l. Bag Clutch button	The shortcut button is used to detect the condition of the bag clutch
	4. MotorDrive Dual-Limit paracontroller	**a**.Lock/Release Mode	MotorDrive Dual-Limit
		b. Clutch Limit Signal Type	**0** Place in place when the signal is effective (when the input is effective, the door is considered to be in place) **1** Place in place when the signal is invalid (when the input is invalid, the door is considered to be in place)
		c. Bag Release Overtime	Default：**3.0**，range：**0.0~99.9** （Unit**s**）
		d. Bag Lock Overtime	Default：**3.0**，range：**0.0~99.9** （Unit**s**）
		e. Bag Locked Input	Quick setting of motor double limit lock unlock bag related switch input and output ports.
		f. Bag Released Input	
		g. Bag Locked Output	
		h. Bag Released Output	

		i. Bag Clutch button	The shortcut button of Bag Clutch
	5. MotorDrive Single-Limit Bag Clutch Paracontroller	**a**.Bag Clutch mode	MotorDrive Single-Limit
		b. Clutch Limit Signal Type	**0** when the signal is valid in place (when the input is valid, the door is considered to be in place). 1 the signal is invalid in place (when the input is invalid, the door is considered to be in place).
		c. Bag Lock Overtime	Default：**3.0**，range：**0.0~99.9** （Unit **s**）
		d. Bag Release valid time	Normal motor release bag valid time Default：**0.5**，range：**0~99.99** （Unit**s**）
		e. Clutch bag button	Shortcut key for clutch bag
		f. Bag Locked Input	Quick setting of motor single limit clutch bag related switch input and output ports.
		g. Bag Locked Output	
		h. Bag Released Output	
Discharge Paracontroller （ with hopper mode）	**1.Step motor** Discharge Paracontrollersetting	**a**.discharge mode	Step motor
		b. DISC Gate Close Overtime	Default：**3.0** range：**0.0~99.9** （Unit **s**）
		c. DISC Gate Limit Signal Type	**0** when the signal is valid in place (when the input is valid, the door is considered to be in place). 1 the signal is invalid in place (when the input is invalid, the door is considered to be in place).
		d. Discharge gate open frequency	Default：**30000**，range：**1~50000** （Unit **Hz**）
		e. Discharge	Default：**20000**，range：**1~50000** （Unit **Hz**）

		gate close frequency	
		f. Discharge steps	Default：**12000**，range：**1~60000**
		g. Motor Start Frequency	Default：**2000**，range：**1~50000** （Unit **Hz**）（this value can't bigger than discharge frequency）
		h. ACC Time	Default：**200**， range：**0.0~9999** （Unit **ms**）
		i. DEC Time	Default：**50**，range：**0.0~9999** （Unit **ms**）
		j.**IO** function define	Optional A) Discharging direction signal status: 0 direction signal output is invalid when discharge door opening: when discharge mechanism opens the door, the direction signal output of discharge stepper motor is invalid, and the direction signal output is effective when closing the door; Direction signal output is effective when discharge and opening the door: when discharge mechanism opens the door, the rotation direction signal output of discharge stepper motor is effective, and the direction signal output is invalid when closing the door. B) Quickly define the discharge input port, discharge direction signal, discharge pulse output port switching quantity.
		k. Power on zero frequency	When the power is cut off and restarted, the clutch motor returns to the origin at this frequency. Initial value：**2000**，range：**0~50000**。（Unit **Hz**）
	2. Motor double limit discharge paracontrollers setting	**a**.discharge mode	Dual motor limit
		b. DISC Gate Close Overtime	Default：**3.0**，range：**0.0~99.9** （Unit **s**）
		c. DISC Gate Limit Signal Type	0, when the signal is effective in place (when the input is effective, the door is considered to be in place). 1, the signal is invalid in place (when the input is invalid, the door is considered to be in place).

		d. DISC Gate Open Overtime	Default：**3.0** range：**0.0~99.9**（Unit **s**）
		e. DISC Gate Opend input	Quick setting of motor double limit discharge related switch input and output ports
		f. DISC Gate Closed input	
		g. DISC Gate Open Output	
		h. DISC Gate Close Output	
		i. Manual Discharge	Manual Discharge shortcut key
	3. MotorDrive Single-Limit paracontroller setting	**a**. Discharge Mode	MotorDrive Single-Limit
		b. DISC Gate Close Overtime	Default：**3.0**，range：**0.0~99.9** （Unit **s**）
		c. DISC Gate Limit Signal Type	0, when the signal is effective in place (when the input is effective, the door is considered to be in place). 1, the signal is invalid in place (when the input is invalid, the door is considered to be in place).
		d. DISC Gate Open Timer	Motor opening signal output time Default：1.00，range：0.00~99.99（Unit s）
		e. Manual Discharge	Manual Discharge short cut key
		f. DISC Gate Closed input	Quick setting of motor single limit discharge related switch input and output ports
		g. DISC Gate Opened output	
		h. DISC Gate Closed output	
	4. MotorDri	**a**. Discharge Mode	MotorDrive Rotating

	ve Rotating Discharge Paracontroller setting	**b**. DISC Gate Close OT	Default：**3.0**，range：**0.0~99.9** （Unit **s**）
		c. DISC Gate Limit Signal Type	0, when the signal is effective in place (when the input is effective, the door is considered to be in place); 1, the signal is invalid in place (when the input is invalid, the door is considered to be in place).
		d. DISC Gate Open Timer	Motor Gate Open signal output timer Default：**1.00**，range：**0.00~99.99**（Unit **s**）
		e. Manual Discharge	Manual Discharge short cut key
		f. DISC Gate Opend input	Quickly set the input and output ports of the I/O module related to discharging in one direction rotation of the motor.
		g. DISC Gate Closed input	
		h. DISC Gate Opend output	
		i. DISC Gate Closed output	

4.7 Statistics

In the main interface, click【Statistics】 to enter the interface.Under the 【Statistics】 paracontroller, the user can view the total accumulation/batch, formula accumulation, user accumulation, history record and carry out clearing, printing and other operations.

- Under the 【Total ACCU/Batch】 interface, you can view the total accumulation and batch number and set the batch number.If the serial port is set to print, click【Data Processing】to print the total total and clear the total total and the batch.
- In total accumulated with batch interface can set 【Set Batch 】, such as a complete set of batch, controller in the main interface box prompts "batch complete alarm", wait for the user processing, when the "clear alarm" input signal effectively, or "clear alarm" button, controller will clear the alarm, it can remove or input stop back to stop state can clear alarm.
- Under “recipe ACUM ", check the cumulative times and weight of each formula number. Click the right side of the interface to switch formula numbers 1-10 and 11-20. Click "Data Processing" to clear all formula accumulations, print all formula accumulations, print the current formula accumulations and select the formula to print.
- Click the formula accumulation to be deleted in the “recipe ACUM" interface to

delete the selected formula accumulation content.

- Under【User ACUM】, check the cumulative times and weight of each user. Click 【Data Processing】to clear all user accumulations, print all user accumulations, print current user accumulations, select user printing and other operations
- Click the user accumulation to be deleted in the 【User ACUM】 interface to delete the selected user accumulation content.
- In the 【History】interface, you can view the history. Click 【Data Processing】 to export the history through the U disk or erase the historical data.

Note: if working in combination mode, the number of batches completed is increased by 1.The set number of batches and the accumulated number of batches are power-off and saved

4.8 I/O Module

The GMC-P7 provides **12** inputs and **16** output interfaces to interface the controller with external devices.

The input and output factory definition contents are as follows
output **1 - 16** corresponds to the controller **OUT1 ~ OUT16** interface,
input **1 - 12** corresponds to the controller **IN1 ~ 12** interface).

There are hopper scales default definition:

Output		Input quantity	
Output port -**1**	**O1** Running	Output port -**1**	**I1** Start
Output port -**2**	**O2** Stoped	Output port -**2**	**I2** Emergency Stop
Output port -**3**	**O3** Coarse Flow	Output port -**3**	**I3** Stop
Output port -**4**	**O4** Medium Flow	Output port -**4**	**I5** Zeroing
Output port -**5**	**O5** Fine Flow	Output port -**5**	**I6** Clear Alarm
Output port -**6**	**O6** Bag Lock	Output port -**6**	**I8** Clear Total ACUM
Output port -**7**	**O7** Result Waiting	Output port -**7**	**I7** Bag Lock/Unlock Request
Output port -**8**	**O8** Ready	Output port -**8**	**I9** Manual Discharge
Output port -**9**	**O9** Discharge	Output port -**9**	**I10** Manual Fine Flow
Output port -**10**	**O10** (-NZ-)	Output port -**10**	**I11** Manual Coarse Flow
Output port -**11**	**O11** Pag Bag	Output port -**11**	**I13** Change Recipe
Output port -**12**	**O13** FILL	Output port -**12**	**I12** Empty Material
Output port -**13**	**O14** EMPT	Note: In interlock mode. Input port **-12** is the interlock input.	
Output port -**14**	**O15** Alarm		

Output port -**15**	**O17** Batch Complete	Output port - **16** is the dual scale interlock output.
Output port -**16**	**O16**Over/Under	

Without hopper scale default definition:

Output		Input quantity	
Output port -**1**	**O1** Running	Input port - **1**	**I1** Start
Output port -**2**	**O2** Stopped	Input port - **2**	**I2** Emergency Stop
Output port -**3**	**O3** Coarse Flow	Input port - **3**	**I3** Stop
Output port -**4**	**O4** Medium Flow	Input port - **4**	**I4** Pause
Output port -**5**	**O5** Fine Flow	Input port - **5**	**I5** Zeroing
Output port -**6**	**O6** Bag Lock	Input port - **6**	**I6** Clear Alarm
Output port -**7**	**O7** Result Waiting	Input port - **7**	**I7** BagLock/Unlock Request
Output port -**8**	**O10** (-NZ-)	Input port - **8**	**I8** Clear Total ACUM
Output port -**9**	**O11** Pat Bag	Input port - **9**	**I10** ,Manual Fine Flow
Output port -**10**	**O15** Alarm	Input port - **10**	**I11** Manual Coarse Flow
Output port -**11**	**O13** FILL	Input port - **11**	**I13** Change Recipe
Output port -**12**	**O27** Bag Release	Input port - **12**	**I12** Empty Material
Output port -**13**	**O14** EMPT	Note: In interlock mode. Input port **-12 is** changed to interlock input . Output port **-12 is** changed to missing material. Output port- **13 is** changed to batch completion. Output port- **14 is** changed to the sewing machine output. Output port **-15 is** changed to conveyor output. Output port- **16 is** changed to dual scale interlock output.	
Output port -**14**	**O17** Batch Complete		
Output port -**15**	**O16** Over/Under		
Output port -**16**	**O44** Sewing Output		

Ton scales default definition:

Output		Input quantity	
Output port -**1**	**O1** Running	Input port - **1**	**I1** Start
Output port -**2**	**O2** Stoped	Input port - **2**	**I2** Emergency Stop
Output port -**3**	**O3** Coarse Flow	Input port - **3**	**I3** Stop
Output port -**4**	**O4** Medium Flow	Input port - **4**	**I4** Pause
Output port -**5**	**O5** Fine Flow	Input port - **5**	**I5** Zeroing

Output port -**6**	**O6** Bag Lock	Input port - **6**	**I6** Clear Alarm
Output port -**7**	**O31** Hang bag	Input port - **7**	**I8** Clear Total ACUM
Output port -**8**	**O34** Controllering bracket up	Input port - **8**	**I7** BagLock/Unlock Request
Output port -**9**	**O7** Result Waiting	Input port - **9**	**I32** Hanging Request
Output port -**10**	**O10** (-NZ-)	Input port - **10**	**I3**Manual Hanger Up/Down
Output port -**11**	**O33** Return Valve	Input port - **11**	**I19** Manual Fine Flow
Output port -**12**	**O32** AirBlow	Input port - **12**	**I20** Manual Coarse Flow
Output port -**13**	**O15** Alarm		
Output port -**14**	**O17** BatchComplete		
Output port -**15**	None		
Output port -**16**	None		

Valve scale default defined:

Output		Input quantity	
Output port -**1**	**O1** Running	Input port - **1**	**I1** Start
Output port -**2**	**O2** Stop	Input port - **2**	**I2** Emergency Stop
Output port -**3**	**O3** Coarse Flow	Input port - **3**	**I3** Stop
Output port -**4**	**O4** Medium Flow	Input port - **4**	**I4** Pause
Output port -**5**	**O5** Fine Flow	Input port - **5**	**I5** Zeroing
Output port -**6**	**O6** Bag Lock	Input port - **6**	**I6** Clear Alarm
Output port -**7**	**O7** Result Waiting	Input port - **7**	**I8** Clear Total ACUM
Output port -**8**	**O17** Batch Completed	Input port - **8**	**I7** Bag Lock/Unlock Request
Output port -**9**	**O10** (-NZ-)	Input port - **9**	**I10** Manual Fine Flow
Output port -**10**	**O11** Pag Bag	Input port - **10**	**I11** Manual Coarse Flow
Output port -**11**	**O13** FILL	Input port - **11**	**I13** Change Recipe
Output port -**12**	**O15** Alarm	Input port - **12**	**I12** None
Output port -**13**	**O16** Over/Under		
Output port -**14**	**O30** Pushing Bag Signal		

Output port -**15**	**O29** Lifting Bag Signal	
Output port -**16**	**O42** Conveyor Start	

P LC mode default definition:

Output		Input quantity	
Output port -**1**	**O3** Coarse Flow	Input port - **1**	**I5** Zeroing
Output port -**2**	**O4** Medium Flow	Input port - **2**	**I6** Clear Alarm
Output port -**3**	**O5** Fine Flow	Input port - **3**	None(No definition)
Output port -**4**	**O38** Over (PLC)	Input port - **4**	None
Output port -**5**	**O39** Under(PLC)	Input port - **5**	None
Output port -**6**	**O49** upper limite(PLC)	Input port - **6**	None
Output port -**7**	**O41**Lower limite(PLC)	Input port - **7**	None
Output port -**8**	None	Input port - **8**	None
Output port -**9**	None	Input port - **9**	None
Output port -**10**	None	Input port - **10**	None
Output port -**11**	None	Input port - **11**	None
Output port -**12**	None	Input port - **12**	None
Output port -**13**	None		
Output port -**14**	None		
Output port -**15**	None		
Output port -**16**	None		

4.8.1 Output, input port definition

Output port, input port content can be defined according to the actual application.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 content decription

Output		
Code	**content**	**Description**
O0	None	If the port number is defined as **0** , this output port is undefined.

O1	Running	When the controller is in the running state, the output port signal is valid.
O2	Stopper	When the controller is in the stop state, the output port signal is valid.
O3	Coarse Flow	Used to control the large discharge port of the filling mechanism. During the filling process, when the current weight is less than the target value -coarseer advance amount, the output port signal is defined as valid.
O4	Medium Flow	Used to control the middle discharge port of the filling mechanism. During the addition, the current weight is less than the target value - added inadvance during the definition output signal is active.
O5	Fine Flow	Used to control the small discharge port of the filling mechanism. During the filling process, when the current weight is less than the target value -fall difference, the output port signal is defined as valid.
O6	Bag Lock	It is used to control the pocket mechanism, and the signal effectively realizes the pocket; the signal is invalid, that is, the unlock bag.
O7	Result Waiting	Used to indicate the end of the filling process. The output port signal is valid before the end of the fine addition to the discharge (with bucket) or the bag (no bucket).
O8	Ready	After the setting is completed, the output port signal is valid.
O9	Discharge	A discharge door for controlling the measuring bucket. The defined output port signal is valid when the discharge is started, so that the material is discharged from the measuring bucket into the package.
O10	(-NZ-)	When the current weight of the scale is less than the set near zero value, the output port signal is valid.
O11	Pat Bag	Used to control the bag making machine. A pulse signal with a controlled pulse width and number of times.
O12	Cutting Material	This output is valid during the fill and is not valid during the non-fill period.
O13	FILL	The filling mechanism for controlling the front end of the bagging scale, when the filling hopper lower level input (the lower material level input is defined) is invalid, the output is

		valid; when the filling hopper upper material level (the loading level input is defined) is valid, The controller invalidates this output.
O14	EMPT	When the blanking input is defined and the input is invalid, the output is valid. When the hopper lowering level (the lowering input is defined) is valid, the controller invalidates the output.
O15	Alarm	When the controller has an out-of-tolerance, batch number, etc. alarm, the output port signal is valid.
O16	Over/Under	When the tolerance or undershoot is exceeded, the output signal is defined as valid.
O17	Batch complete	When the set number of batches is completed, the output port signal is valid.
O18	Interlock Output	Used in the double scale mode, connected to the ON/OFF "Double scale interlock input" of another controller.
O19	Filling O/P PU	When the filling mode is set to stepper motor mode to control the filling door ON/OFF: This signal isused as a pulse signal output to the filling stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the ports of OUT12~16 .**
O20	Filling O/P DR	When the filling mode is set to stepper motor mode to control the filling door ON/OFF: This signal isused as the motor rotation direction signal output to the filling stepping motor driver to control themotor to reverse. **Note: This function can only be defined on one output port. There can be no multiple output ports to define this function. And can only be defined to one of the ports OUT1~11 .**
O21	Bag Clutch O/P PU	When the bag mode is set to the stepping motor mode control lock unlock bag: This signal is used as the output pulse signal to the pinch stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the ports of OUT12~16 .**
O22	Bag Discharge O/P DR	When the bag mode is set to the stepping motor mode control lock unlock bag: This signal is used as the motor

		rotation direction signal output to the pinch bag stepping motor driver to control the motor to reverse. (No bucket mode is valid) **Note: This function can only be defined on one output port. There can be no multiple output ports to define this function. And can only be defined to one of the ports OUT1~11 .**
O23	DISC O/P PU	When the unloading mode is set to stepper motor mode to control unloading: this signal is used as a pulse signal output to the discharge stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the ports of OUT12~16 .**
O24	DISC O/P DR	When the unloading mode is set to stepper motor mode to control unloading: this signal is used as the motor rotation direction signal output to the discharge stepper motor driver to control the motor to reverse. **Note: This function can only be defined on one output port. There can be no multiple output ports to define this function. And can only be defined to one of the ports OUT1~11 .**
O25	Filler Open	When the filling mode is set to the normal motor mode to control the filling door ON/OFF: the large discharging port for controlling the weighing mechanism is opened. This signal is active at the beginning of the filling process and the effective time is set in the motor paracontrollers.
O26	Filler Close	When the filling mode is set to the normal motor mode to control the filling door ON/OFF: it is used to control the action of closing the filling port of the filling mechanism. The signals are valid at the time of coarse addition, medium addition and fine addition respectively. The effective time is based on the time paracontroller set in the motor paracontrollers. It is decided that the signal is valid at the end of the fill until it becomes invalid when the fill limit is valid.
O27	Bag Release	When the bag mode is set to the ordinary motor control lock unlock bag: it is used to control the unlock bag. When the signal is valid, the motor is driven to perform the unlock bag action. When the signal is invalid, the unlock bag

		action stops.
O28	DISC Gate Close	When the unloading mode is set to normal motor forward and reverse control discharge, it is used to control the closing action of the controllering bucket discharge door. When the signal is valid, the motor is driven to open and close the door. When the signal is invalid, the door closing action stops.
O29	Lifting Bag Signal	It is used to control the bag-making mechanism, and this signal effectively realizes the bag-lifting action .
O30	Pushing Bag Signal	It is used to control the push bag mechanism, and the signal effectively realizes the push bag action.
O31	Hanging Bag	It is used to control the bag mechanism, and the signal effectively realizes the hanging bag; the signal is invalid and the hook is unlock.
O32	AirBlow	For controlling the operation of the blowing means,at the end of the controllering bracket upward, the signal is valid.
O33	Return Valve	Return valve for controlling the run, at the end of blowing, the signal is valid.
O34	Hanger Up (this paracontroller is reserved)	Used to control the upstream of the controllering bracket. This signal is valid until the upper limit is valid if both the bag and the bag have been completed before filling. This signal output is valid after the unlock bag is completed. Until the lower limit input is valid.
O35	Hanger Down (motor)(this paracontroller is reserved)	Used to control the downstream of the controllering bracket . (When there is a bag making function, it needs to be started after the bag is finished) .
O36	Convery **A** (this paracontroller is reserved)	Electric mode, for controlling the operation of the belt **A,** the unlock bags, the hook after the song, the signal is valid.
O37	Convery **B** (this paracontroller is reserved)	Electric mode, for controlling operation of the belt**B,** the belt **A** is stopped, the signal is valid.
O38	Over(**PLC**)	This signal is valid when it is out of tolerance (**PLC**) .
O39	Under(**PLC**)	This signal is valid when there is a short circuit (**PLC**) .
O40	Upper	When the weighing value > upper limit value, the upper limit

	Limite (**PLC**)	output is valid .
O41	Lower Limite (**PLC**)	When the weighing value < lower limit, the lower limit output is valid .
O42	Conveyor Start	In the bucketless mode, it is used to control the start and stop of the conveyor. The signal is effectively activated by the conveyor and the signal is invalid and the conveyor is stopped.
O43	Coding	The code signal is output when the pocket signal output is valid and the code delay is over.
O44	Sewing Output	When the sewing machine input is valid, the sewing machine output is valid.
O45	Cutter Output	After the sewing machine output time is over, the output is valid, and the effective time is the tangential machine output time .
O46	Auxiliary PU Output **1**	After the auxiliary pulse **input** effective, the output pulse signal (valid for the auxiliary pulse **an**effective time, dead time of the auxiliary pulse **a**dead time), and outputs the total time to stop the output (the total time is set to **0,** it has been by Pulse output) .
O47	Auxiliary PU Output **2**	After the auxiliary pulse **2** input is active, the output pulse signal (valid for the auxiliary pulse **2**effective time, dead time of the auxiliary pulse **2**dead time), and outputs the total time to stop the output (the total time is set to **0,** it has been by Pulse output) .
O48	Auxiliary PU Output **3**	After the auxiliary pulse **3** input is valid, the pulse signal is output (the effective time is theauxiliary pulse **3** valid time, the invalid time is the auxiliary pulse **3** invalid time), and after the output execution total time is reached, the output is stopped (the total execution time is set to **0** , then the button is pressed. Pulse output) .
O49	Auxiliary PU Output **4**	After the auxiliary pulse **4** input is valid, the pulse signal is output (the effective time is theauxiliary pulse **4** valid time, the invalid time is the auxiliary pulse **4** invalid time), and after the output execution total time is reached, the output is stopped (the total execution time is set to **0** , then the button is pressed. Pulse output) .
O50	DISC Patting	The output of the discharge rapping function.

	Output	
O51	User Logic Output **1**	Auxiliary logic **1** output signal.
O52	User Logic Output **2**	Auxiliary logic output signal **2.**
O53	User Logic Output **3**	The output signal of the auxiliary logic output **3** .
O54	User Logic Output **4**	The output signal of the auxiliary logic output **4** .
O55	User Logic Output **5**	The output signal of the auxiliary logic output **5** .
O56	User Logic Output **6**	The output signal of the auxiliary logic output **6** .
O57	Multi-function support control patting bag (ton bag scale mode)	For one - piece control bracket and patting bag. When the patting bag is not executed: this I/O Module is the same as the uplink state of the measuring bracket. When the function of patting bag is on: this I/O Module is opposite to the state of patting bag.(valid patting bag support is invalid, invalid patting bag support is valid).
O58	Conveyor 2 output	Control conveyor 2 output is valid
O59	Conveyor 3 output	Control conveyor 3 output is valid
O60	Conveyor 1 reverse output	Control conveyor 1 reverse output is valid
Input quantity		
I0	None	If the port number is defined as **0** , this input port is undefined.
I1	Start	The signal valid controller will enter the running state.This input is a pulse input signal.
I2	Emergency Stop	The signal valid controller will return to the stop state. This input is a pulse input signal.
I3	Stop	The signal valid controller will return to the stop state after completing the current bagging process. This input is a pulse input signal.

I4	Pause	The signal valid controller will suspend work, retain the current state, and resume working after receiving the start signal. This input is a pulse input signal.
I5	Zeroing	The signal valid controller will clear the weight. This input is a pulse input signal.
I6	Clear Alarm	Used to clear the alarm output of the controller. This input is a pulse input signal.
I7	Bag Lock/Unlock	It is used to control the action of the pocket mechanism. This input is effective for one pocket output, and the effective pocket output is invalid again (ie: unlock bag).
I8	Clear Total ACUM	Clearing the total accumulated weight and number of times will also clear the recipe accumulation and user accumulation .
I9	Manual Discharge	Used to manually remove material from the measuring hopper. The input is effective once, the discharge output is valid, and the effective discharge output is invalid again.
I10	Manual Fine Flow	The input is valid once and the output is valid, and the effective fine input is invalid again.
I11	Manual Coarse Flow	Pulse type signal. Function in the stop state, used to manually turn the controller on and off. Effective once, it is effectively turned off again.
I12	Empty Material	Pulse type signal. Acting in the stop state, used toempty the storage hopper while opening the discharge door and the fill door. Effective once , it is effectively turned off again. (No action in bucket, PLC, valve port, ton package mode)
I13	Change Recipe	This input is valid once, the recipe number is changed to the next target whose value is not zero, and the recipe number with the target value of zero is skipped.
I14	Supplement Full	Used to connect the upper level of the hopper, this input should be level input.
I1 5	Supplement Empty	Used to connect the lower level of the hopper, this input should be level input. The blanking bit input is invalid or left blank to indicate the material shortage. The blanking level input is valid to indicate that there is no shortage of material.
I16	Start/E-stop (level Signal)	The signal is valid and the controller enters the running state. If it is invalid, it returns to the stop state. This input is a level

		signal.
I17	Start/Stop (level Signal)	The signal valid controller enters the running state, and if it is invalid, it returns to the stop state after completing the current bagging process. This input is a level signal.
I18	M Discharge (level Signal)	Used to manually remove material from the measuring hopper. The input effective discharge output is valid, and the input invalid discharge output is invalid.
I19	M Fine Flow (level Signal)	The signal is effectively fine and the signal output is valid. The signal is invalid and the fine signal output is invalid.
I20	M Coarse Flow(level Signal)	The signal is valid and the signal output is valid. The signal is invalid and the signal output is invalid.
I21	Bag Locked (level Signal)	If this input is defined, it effectively indicates that the pocket is in place, and vice versa . No fighting mode: the folder bag has state, the controller must be detected "bag-in place" input active material began to increase, the process ofadding material, detecting whether the signal is notvalid. This input should be a level input.
I22	DISC Gate Opended (level Signal)	The unloading mode is set to the normal motor forward and reverse double limit mode to control the unloading: this signal is used as the limit input signal of the discharge door opening door. When thecontroller detects that the signal is valid, it considers that the discharge door has been opened.
I23	Filler Gate Closed (level Signal)	When the unloading mode is set to normal motor forward and reverse double limit mode to control unloading: this signal is used as the limit input signal of the filling door closing door. When thecontroller detects that the signal is valid, it considers that the filling door has been closed.
I24	DISC Gate Closed (level Signal)	This signal acts as a limit input signal for the discharge door to close the door. When thecontroller detects that the signal is valid, it considers that the discharge door has been closed.
I25	Bag Released (level Signal)	The pocket mode is set to stepper motor lock unlock bag / motor double limit lock unlock bag mode control lock unlock bag: This signal is used as the limit input signal of the pocket bag unlock bag in place. (Note: This signal is determined by the type of in-position

		signal and is set to positive logic: when the input signal is valid, it is considered that the pocket mechanism has been unlockned in place ; set to reverse logic: when the input signal is invalid, it is considered that the pocket mechanism has beenunlockned in place.)
I26	Sewing Input	When the digital input is valid, the effective output of the sewing machine is started.
I27	Sewing Emergency	When the digital input is valid, the sewing machine stops outputting.
I28	Auxiliary PU Input **1**	Auxiliary PU Input 1 self defined trigger input signal
I29	Auxiliary PU Input **2**	Auxiliary PU Input 2 self defined trigger input signal
I30	Auxiliary PU Input **3**	Auxiliary PU Input 3 self defined trigger input signal
I31	Auxiliary PU Input **4**	Auxiliary PU Input 4 self defined trigger input signal
I32	Hanger Request	Used to control the movement of the bag mechanism.
I33	Hanger Up Done	The upper limiter for connecting the controllering bracket, this input should be a pulse input .
I34	Hanger Down Done	The lower limiter used to connect the controllering bracket, which should be a pulse input .
I35	Hanger Lower Limitation	The lower limiter for connecting the controllering bracket, this input should be a pulse input .
I36	Convery **A** Stop (this paracontroller is reserved)	In the electric mode , the stop detection load cell for connecting the belt **A** , which should be a pulse input .
I37	Convery **A** Stop (this paracontroller is reserved)	In the electric mode, the stop detection load cell for connecting the belt **B** should be a pulse input.
I38	Manual Hanger Up/Dowm	Used to control the motion of the stand, this input is a pulse input. The motion of the stand can be controlled in the stopped state.

		In the running state, it is the start signal of the motion of the bracket.
I39	Interlock Input	Used in the double scale mode, the ON/OFF "double scale interlock output" used to connect another controller.
I40	Auxiliary logic input 1	Auxiliary PU Input 1 self defined trigger input signal.
I41	Auxiliary logic input 2	Auxiliary PU Input 2 self defined trigger input signal.
I42	Auxiliary logic input 3	Auxiliary PU Input 3 self defined trigger input signal.
I43	Auxiliary logic input 4	Auxiliary PU Input 4 self defined trigger input signal.
I44	Auxiliary logic input 5	Auxiliary PU Input 5 self defined trigger input signal.
I45	Auxiliary logic input 6	Auxiliary PU Input 6 self defined trigger input signal.
I46	Filling allow input	If the Filling allow input is defined in the I/O Module, judge whether the Filling allow input is valid before the filling process. If it is valid, start the filling process; if not, wait.
I47	Discharge allow input	Discharge allow input is only for the hopper structure. If discharge allow input is defined in the I/O Module, it is necessary to judge whether the discharge allow input is valid after setting the value. If it is valid, the discharge process will start; if it is not, it will wait.
I48	Conveyor 1 is turning forward	At stop status, manual control conveyor starts turning forward(When the emergency stop signal is valid, the forward turning output of conveyor 1 is invalid)
I49	Conveyor 1 is turning reversal	Control conveyor starts reversal (When the emergency stop signal is valid, the reversal turning output of conveyor 1 is invalid)
I50	Conveyor 2 limit input	Conveyor 2 Limit Signal Type
I51	Conveyor 3 limit input	Conveyor 3 Limit Signal Type

4.9 Host mode

Host mode to communicate with the slave to send commands, using host mode, note

the following points.

- The communication paracontrollers 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; Failure to write data returns failure to send; 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 data sent to the slave. The high and low bits correspond to each other, and the data can be used when the length is double word

Host mode	**1.** Communication ID	Initial value：**1**； **1~99** option
	2. Data Length	Initial value： single byte； single byte /double byte option
	3. Initial value	Initial value：**1**； **1~65535** option，default initial address starts from **0X0001**
	4. Write paracontroller	Initial value：**0**； **0~999999** option

5. Function

5.1 Setting the working mode

The GMC-P7 has **five** scale body structures. Choose between the system and the communication - scale structure.

They are: hopper scale, hopper less scale, **PLC** mode, Ton scales, valve scales .

(Note: Among them, the working mode of the bucket scale and the bucketless scale supports the dual scale interlock mode. Other scales do not support the dual scale interlock mode)

5.2 Batches

The batch number is used for reminder of the number of packages. When the set number of batches is completed during the automatic running process, the controller issues the batch number to the alarm and stops, waiting for the user to process, the batch number and the alarm output are valid. At this time, press the clear alarm button or make The "clear alarm" input signal is valid and the controller will clear the above alarm. If the batch number is set to **0** , the batch number judgment is not performed.

The batch number ranges from **0 to 50000.** The initial default value is **0 (**no batch count judgment).

5.3 Level control

Due to the different application conditions, the filling device of the storage scale storage bin is divided into **two** types: double material level (upper and lower material level), single material level (lower material level) and no level positioner.

5.3.1 Double digit

The upper and lower material levels are defined, corresponding to the double material level. At this time, the controller has a filling control function, and the control principle is: when the upper and lower material level inputs are invalid, the controller filling output is valid; when the filling level input is valid, the filling output is invalid. At the same time, before each filling (coarse , medium, fine), the controller will check whether the lower level is valid. If it is invalid, wait for this signal; only when this signal is valid, the filling process starts. During the filling process, the controller does not detect whether the material level signal is valid.

5.3.2 Single Level

The blanking level is defined, and the loading level is not defined, corresponding to the single material level. At this point the controller will not perform fill control. Only the fill level is detected before filling. If the material level is invalid, wait for this signal; only when

this signal is valid, the filling process starts. During the filling process, the controller does not detect whether the material level signal is valid.

The upper and lower material levels are not defined, corresponding to the situation without the positioner. At this time, the controller does not perform the filling control, and the raw material level is not detected before the filling.

5.4 Quick setup

In the stopped state, the quickly modified recipe data is saved in real time.

The data modified during operation, the zero zone value is saved in real time, and other recipe paracontrollers are automatically updated when the next scale is started after exiting the quick setting interface (the combination mode is to be released after the unlock bag is started and the next scale target value is updated).

The recipe paracontrollers are modified during operation, but when the next scale is updated, the emergency stop signal is entered and the controller is stopped and the recipe is updated immediately.

M odbus can also be carried out at runtime when communicating recipe quantitative value changes, but can not modify the recipe number.

5.5 Adaptive function

The adaptive function is a convenient function to adjust the filling speed when the user first uses the controller. When this function is turned on, it will automatically adjust the paracontrollers such as the coarse increase advance amount, the medium increase advance amount, the fine increase advance amount, the coarse add ban time, the medium plus ban time, and the fine add time. The filling process is optimized.

Note:

1. All advances must be zero in order to be used normally.

2. If the drop correction and the adaptive function are turned on at the same time, the drop correction function is forcibly turned off.

3. When the first scale is adaptively started, the scale body must be stable and the current weight is zero.

5.6 U disk upgrade software

5.6.1 Upgrade process

Proceed as follows:

1.	containing the upgrade kit "TPCBACKUP" into the controller
2.	Power up the controller, and the message "You are using the comprehensive function package of MCGSTPC USB flash disk, click 'Yes' to enter the system setting interface and start the comprehensive function package, click' No 'to exit" pops up;Click "Yes" and the "User Project Update" button pops up
3.	Click "user project update" button, select GMC-P7 engineering began to download
4.	Download success, restart automatically

5.6.2 U disk upgrade boot interface

Proceed as follows:

1.	Insert the **USB** flash drive into the computer and create a new " GM9907-L2 " folder in the **USB** flash drive
2.	Save the image of “ GM9907-L - Logo .bmp ” into the “ GMC-P7 ” folder;
3.	Plug the USB flash disk into the controller, switch to the system administrator permissions, go to the System Maintenance - Software Upgrade interface, long press the blank in the lower right corner of 5S, and the "Click Upgrade" button pops up, jump to the upgrade interface, click "Upgrade", click "Upgrade" again, and the words "Upgrade in process" appear, indicating that the 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

5.7 U disk upgrade boot interface

Proceed as follows:

1.	Save the image file (resolution 800*480, format.bmp) into the root directory of U disk containing the project package (tpcbackup)
2.	Insert the USB flash drive into the controller
3.	The controller pops up the display box of [Equipment vendor USB disk kit], and select "Update startup bitmap".
4.	Enter the LOGO selection interface, select the image to be upgraded, and click OK. It will prompt you to restart after successful bitmap update

5.8 Decoupling function

Decoupling formula paracontrollers of ton bag scale paracontrollers, the decoupling upstream ON/OFF is opened:

Setting value after filling, unlock bag, control equipment bracket downward, downward after, take off the hook, the conveyor start, after decoupling before delay on bracket start up, decoupling upward duration, then execute the uplink pause time, pause time arrives, stent decline, time duration for decoupling.

Decoupling alarm:

If the uncoupled alarm ON/OFF is opened, during this process, if the current weight value is greater than the uncoupled alarm weight value, the machine will stop and the uncoupled alarm will be stopped.The conveyor performs reversal.

Note: This function is mainly used for prevention. After the filling, the bag can't take off the hook completely. When the conveyor is running, the current weight value will suddenly increase, resulting in controller damage

5.9 Running mode of bracket

Running mode of bracket：Air Drive-unlimit、Motor Drive-dual limit、Air Drive-dual limit

Air Drive-unlimit

I/O Module: bracket uplink

When the controllering bracket is mounted, the uplink output of the controllering bracket is effective. After the uplink delay time of the controllering bracket, the uplink of the controllering bracket is in place. (During operation, after ascending to position, the controller can start peeling and filling, etc.)

When the measuring support goes down, the uplink output of the measuring support is invalid. After the delay time of the measuring support goes down, the support goes down in

place.(In operation, the controller can start to take off the hook after the downlink is in place)

Motor Drive-dual limit：

I/O Module input: support up in place, support down in place. I/O Module output: controllering support up, controllering support down.

When the measuring support is mounted, the uplink output of the measuring support is effective, while the downlink output of the measuring support is invalid. Wait for the uplink of the measuring support to be in place. If the support is still not in place within the uplink timeout period, the rising timeout alarm will be given.After the up-flow is in place, the up-flow output of the controllering support and the down-flow output of the controllering support are invalid

When the controllering support is in the downward direction, the downstream output of the controllering support is effective, while the upstream output of the controllering support is invalid. If the support is still not in the downward direction within the downward timeout period of the support, the downward timeout alarm will be given.When the downlink is in place, the downlink output of the controllering support and the uplink output of the controllering support are both invalid

Air Drive-dual limit：

I/O Module input: support up in place, support down in place. I/O Module output: controllering support up, controllering support down.

When the measuring support is mounted, the uplink output of the measuring support is effective, while the downlink output of the measuring support is invalid. Wait for the uplink of the measuring support to be in place. If the support is still not in place within the uplink timeout period, the rising timeout alarm will be given.After the up-flow is in place, the up-flow output of the controllering support is effective, while the down-flow output of the controllering support is invalid

When the controllering support is in the downward direction, the downstream output of the controllering support is effective, while the upstream output of the controllering support is invalid. If the support is still not in the downward direction within the downward timeout period of the support, the downward timeout alarm will be given.When the downlink is in place, the downlink output of the controllering support is effective, while the up-link output of the controllering support is invalid

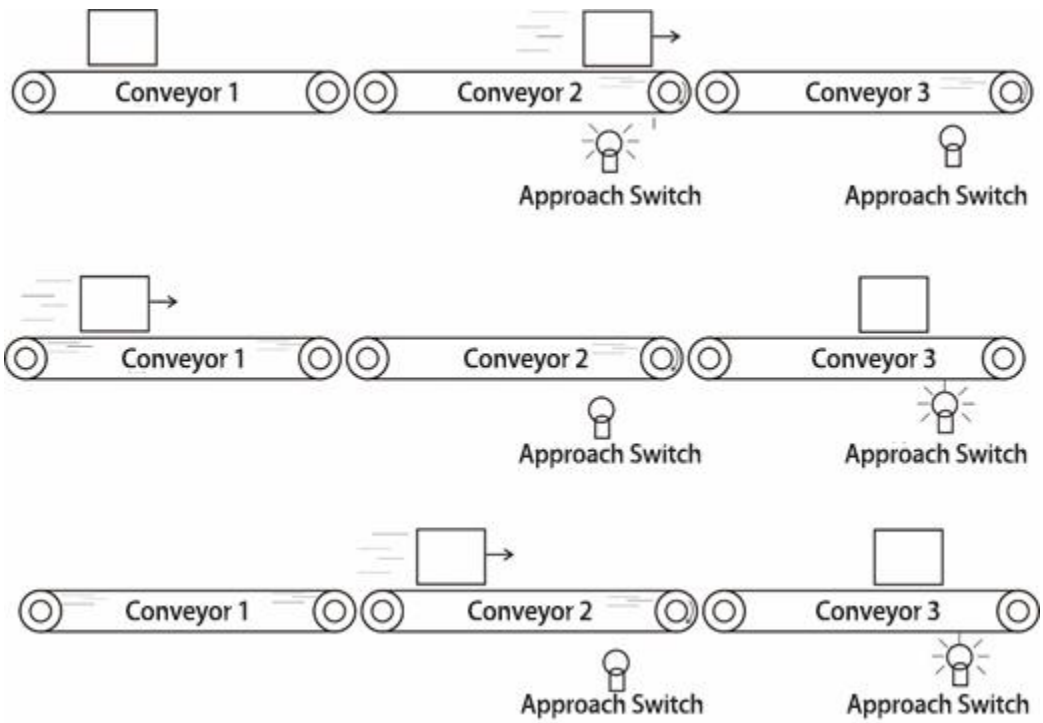
5.10 Use method of 3 - class conveyor for ton baling scale

Three conveyors are placed under the ton-bale balance. Conveyor No. 1 is placed under the ton-bale balance. One bag of materials is placed on conveyor 1 after decoupling.Conveyer 2 is behind conveyer 1.Conveyer 3 is behind conveyer 2.There is a limit switch (approach switch) at the end of conveyor 2 and 3 respectively.

1) If the limit switch (approach switch) of conveyor 3 is invalid, then conveyor 2 and Conveyor 3 will rotate to transport materials to conveyor 3. When the limit switch (approach switch) of conveyor 3 is effective, the rotation of conveyor 3 will stop.Similarly, conveyor 1 transports materials to conveyor 2.

2) When the upper limit switch (proximity switch) of conveyor 2 is in effect, conveyor 1 cannot start operation even though it has been disconnected.When the limit switch (proximity switch) of conveyor 2 is invalid, conveyor 1 rotates to transport materials to conveyor 2.

3) When there are materials in conveyor 3 and Conveyor 2, the forklift truck can shovel the materials away and wait for the next start and rotation.



6. Serial communication

GMC-P7 provides two serial communication interface, and serial port 1 and 2 can be selected in a continuous manner, **Modbus** mode and printed three kinds of functions. The first serial port of the controller is **RS - 23 2** and the second serial port of the controller is **RS - 485** .

6.1 Printing method

When the serial port serial port **1** or serial port **2 is** selected as the **printing** mode, the corresponding serial port can realize the printing of the related accumulated content by connecting the serial printer.

The communication paracontrollers related to the printing method refer to the serial port paracontroller items, among which are noted:

1) **Baud Rate** - This paracontroller should be selected in accordance with the printer settings used for the connection.

2) **Communication Format** - This paracontroller should be selected in accordance with the printer settings used for the connection.

Note: When the print language is selected as Chinese, the data bit cannot be used in 7 -bit format, otherwise there will be an error in printing.

3) **Print Format** - The peripheral **format** allows you to set the print format to **24** columns or **32** columns . In addition , the print language of the peripheral paracontrollers is set to Chinese or English.

6.1.1 Auto print

In the **print** mode, the automatic print ON/OFF for peripheral paracontrollers is set to **On** . Then, each time the weighing of the controller is completed, the weighing result will be printed automatically. The format is as follows:

The English 24 column print format is as follows:	**The English 32 column print format is as follows:**
Packing Detail Unit : kg Recipe ID : 20 Total ACUM PCS Result ---------- 1 5.50 2 5.50	Packing schedule Unit: kg Recipe number: 20 Total ACUM PCS Target Result ---------- 3 5.60 5.50 4 6.00 5.80

6.1.2 Total cumulative printing

In the **printing** mode, stop the state, enter the “Accumulate and Batch” interface, and click “Print Total Accumulation”. The format is as follows:

The English 24 column print format is as follows:	**The English 32 column print format is as follows:**
Total ACUM report Time: 2018/6/19 13:28 Unit: kg --- PCS: 18 Wt: 84.16 ---	Total ACUM report Time: 2018/6/19 13:36 Unit: kg --- PCS: 24 Wt: 129.40 ---

6.1.3 Formula cumulative printing

In the printing mode, stop the state and enter the “Accumulate and Batch” interface. Select “Recipe Accumulation” and click “Print Selected Receipts” .

Click the "Print all the recipes rolled-up" to print all the recipes **(1 to 20)** accumulated, the controller will automatically skip the cumulative recipe **0** does not print. The format is as follows:

The English 24 column print format is as follows:	**The English 32 column print format is as follows:**
All Recipe ACUM Report Time: 2018/6/19 13:29 Unit: kg --- Recipe ID: 20 PCS: 18 Wt: 84.16 ---	All Recipe ACUM Report Time: 2018/6/19 13:36 Unit: kg --- Recipe ID: 20 PCS: 24 Wt: 129.40 ---

6.1.4 User cumulative printing

In the printing mode, stop the state and enter the “Accumulate and Batch” interface. ON/OFF to the user cumulative interface and press "Print Selected User Accumulation".

Click “Print All Users Accumulate” to print the total of all users (0~9). The controller will automatically skip users whose user accumulation is 0 and will not print. The format is as follows:

The English 24 column print format is as follows:	**The English 32 column print format is as follows:**

All User ACUM Report Time : 2018/6/19 13:29 Unit : kg ---------- User ID : 9 PCS : 16 Wt : 72.26 ----------	All User ACUM Report Time: 2018/6/19 13:37 Unit: kg ---------- User ID: 9 PCS: 22 Wt: 117.50 ----------

6.2 Continuons mode data frame format

STX	COM ID.	R	T	SP	SP	Cumulative number	,	Cumulative weight	CRC	CR	LF

among them:

R —— **52H**

T —— **54H**

SP —— **20H**

Cumulative number - **9** digits, **000000000~999999999**

Cumulative weight - **10** digits, including decimal point

For example, the controller sends the following 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 means: **1#** scale, the current total cumulative number is **100** times, the total cumulative weight is **0.5000.**

6.3 Re-Cont specific protocol

In this way, there is no need to send any command to the weighing display, and the display will automatically send the collected data to the computer

Return data frame format description:

State	,	GS/NT	,	+/-	Displayed value	Unit	CR	LF
2 Units	**2C**	**47 53/4E 54**	**2C**	**2B/2D**	**7 Units**	**2 Units**	**0D**	**0A**

Note:

State—2Units, OL(spill): 4FH 4CH;ST(stable):**53H 54H;US**(unstable):**55H 53H**

Displayed value—— **7** Units，Include decimal point，If there is no decimal point, the high value is a space

Unit ——**2**units，**g :20 67； kg 6B 67；t :20 74**

6C 62(lb)

For example:

When the weighing 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

The current state is stable, the data value is positive, and the display value is 11.120kg

6.4 Modbus-RTU Protocol

The communication mode selected in serial port 1 or serial port 2 is Modbus-RTU mode.

6.4.1 Abnormal function code and code

◆ Function code supported by the controller:

function code	name	Description
03	Read register	Read up to **125** registers in a single pass .
06	Write a single register	Use this function code to write a single holding register.
10	Write multiple registers	This controller only supports writing double registers. It must be aligned when writing. It is not allowed to write only a part of dual registers. Read-only part is allowed when reading.
01	Reading coil	Note that this length is in bits .
05	Write coil	

Note: This controller only supports the above MODBUS function code. When the controller performs other function codes, the controller will not respond.

◆ MODBUS exception code response

Code	name	meaning
02	Illegal data address	For the controller, the error code indicates that the data address received is an address that is not allowed.
03	Illegal data value	The portion of data written and the allowed range.
04	Slave failure	An unrecoverable error occurs when the controller is attempting to perform the requested operation.
07	Unsuccessful programming request	For the controller, the received command cannot be executed under the current conditions.

6.4.2 MODBUS transmission mode

The **MODBUS** transmission mode is the **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** -bit data bit, **1** stop bit, even parity (**8-E-1**)

8 -bit data bit, **1** stop bit, no parity (**8-N-1**)

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

Code: **RTU**

Example :

Read command:

Command function (single /double) byte	COM ID.	function code	Data address	Number of data read	CRC check code	
Read weight (double)	01	03	0002	0002	65	CB
Target value (double)	01	03	01F6	0002	25	C5
Zero voltage (double)	01	03	0069	0002	14	17
Gain voltage (double)	01	03	006B	0002	B5	D7

Write command:

(Note: Write weight data with 50 as an example. When it is displayed as two decimal places, it should be written to 5000)

Command function (single /double) byte	COM ID.	function code	Data address	Write register number	Write bytes	data input	CRCcheck code	
Write target value (double)	01	10	01F6	0002	04	0000 1388	7C	07
Zero calibration (double)	01	10	0069	0002	04	0000 0001	F4	2D
Gain calibration (double)	01	10	006B	0002	04	0000 1388	B9	62

6.4.3 MODBUS address allocation

Protocol address	PLC address	meaning	Description	
0000-0001	40001-40002	毛重	仪表显示毛重值，有符号整型	
0002-0003	40003-40004	净重	仪表显示净重值，有符号整型	
0004-0005	40005-40006	皮重	皮重值	
0006-0007	40007-40008	Control	**Bit**	Description

		status (bit)	**. 0**	Unstable weight : **0**; stable : **1**
			. 1	Non-zero : **0** ; zero :**1**
			. 2	Currently showing the weight of the symbol +/- Positive sign : **0** ; minus sign : **1**
			. 3	overflow
			. 4	Weight overflow
			. 5	Negative weight overflow
			. 6	Load cell is overflowing
			. 7	Load cell negative overflow
			. 8	Millivolts stable:**1** unstable: **0**
			. 9~ . 31	Reserved
0008-0009	**40009-40010**	Operating status	**.0**	**0** : stop; **1** : run
			.1	Before filling
			.2	Coarse Flow
			.3	Medium Flow
			.4	Fine Flow
			.5	Result Checking
			.6	Ready
			.7	Discharge
			.8	(-NZ-)
			.9	Over
			.10	Under
			.11	Qualified(合格)
			.12	OVER/UNDER Pause
			.13	Bag Lock
			.14	Lifting Bag (valve)
			.15	Pushing bag (valve)
			.16	Hanging bag (ton pack)
			.17	AirBlowing (ton pack)
			.18	Return Valve (ton pack)
			.19	Hanger Up (ton pack)

			.20	Hanger Down (ton pack)
			.21	Upper limite (**PLC**mode)
			.22	Lower limite (**PLC**mode)
			.23	Batch complete
			.24	Alarm
			.25	Gross weight status: **1 :** Net **:0** : Gross
			.26	Clear
			.27	OverLimit (**PLC**)
			.28	UnderLimit (**PLC**)
			.29	In the non-bucket mode, after unlock the bag, the mark is valid until the end of this filling
			.30	Stop
			.31	Pause
0010-0011	**40011-40012**	Control state **2**	**.0**	Dual scale Interlock Output (interlock mode)
			.1	Supplement Full
			.2	Supplement Empty
			.3	FILL
			.4	EMPT
			.5	Cutting Material
			.6	Pat Bag
			.7	Coding
			.8	DISC Patting Output
			.9	Conveyor Start
			.10	Sewing output
			.11	Cutter Output
			.12	Auxiliary PU Output **1**
			.13	Auxiliary PU Output **2**
			.14	Auxiliary PU Output **3**
			.15	Auxiliary PU Output **4**
			.16	User Logic Output **1**
			.17	User Logic Output **2**
			.18	User Logic Output **3**

			.19	User Logic Output **4**
			.20	User Logic Output **5**
			.21	User Logic Output **6**
			.22	Convery **A** (ton pack)
			.23	Convery **B** (ton pack)
			.24	Manual Fine Flow
			.25	Manual Discharge
0012~0013	**40013~40014**	Reserved		
0014-0015	**40015-40016**	Automatic clear alarm	**.0**	Target Value Can Not Be 0
			.1	Can Not Run When Weight OFL
			.2	Over Zero Range!
			.3	Non-Stable
			.4	Over/Under Alarm
			.5	Beyond Discharge gate Limitation
			.6	Reserved
			.7	Running，Zero Disabled
			.8	Over Zero Range When AutoZero
			.9	Automatic zeroing instability
			.10	Filler Gate Close Err
			.11	DISC Gate Close Err
			.12	Fi-Filling Gate Open Width Not be 0
			.13	Me-Filling Gate Open Can Not Narrower Than Fi-Filling
			.14	Co-Filling Gate Open Can Not Narrower Than Me-Filling
			.15	Co-Filling Gate Open Can Not Narrower Than Fi-Filling
			.16	Running Stable Timeout

0016~0019	**40017~40020**	Reserved		
0020-0021	**40021-40022**	Manually clear the alarm	**.0**	Batch Completed!
			.1	Over/Under Pause
			.2	Filling Gate Close OverTime t
			.3	Bag Lock OT
			.4	Bag Unlock OT
			.5	DISC Gate Close Overtime
			.6	DISC Gate Open OverTime
			.7	Reserved
			.8	Reserved
			.9	Internal Communication Failed
			.10	Coarse Flow OT
			.11	Medium Flow OT
			.12	Manual Fine OT
			.13	Discharge OT
			.14	Discharge Patting OT
			.15	bag not release completely
			.16	Hanger Up OverTime
			.17	Hanger Down OverTime
			.18	SP2 Gate Close Err
			.19	SP3 Gate Close Err
0022~0025	**40023~40026**	Reserved		
0026-0027	**40027-40028**	Calibration alarm	Capacity Low	
			Capacity Over	
			Zero Voltage Over	
			Zero Voltage Low	
			Input Unstable	
			Gain Voltage Over	
			Gain Voltage Low	
			Input Unstable	
			Weight Error	
			Over Resolution	

0028-0029	**40029-40030**	Alarm **3**	Reserved
(real time paracontrollers)Read only			
0030-0031	**40031-40032**	Total cumulative weight is **6**digits	
0032-0033	**40033-40034**	The total cumulative weight low **9**	
0034-0035	**40035-40036**	Total accumulated number of packets	
0036-0037	**40037-40038**	Current formula cumulative weight is **6** digits high	
0038-0039	**40039-40040**	The current recipe cumulative weight low **9**	
0040-0041	**40041-40042**	Current formula cumulative number of packages	
0042-0043	**40043-40044**	User cumulative weight is **6**digits	
0044-0045	**40045-40046**	User cumulative weight is **9**digits lower	
0046-0047	**40047-40048**	User cumulative number of packets	
0048	**40049**	Batch remaining	
0049	**40050**	Coarse Flow Timer	
0050	**40051**	Medium Flow Timer	
0051	**40052**	Fine Flow Timer	
0052	**40053**	Result Waiting Timer	
0053	**40054**	Discharge timer	
0054	**40055**	Previous package timer（Coarse timer + medium timer +fine timer + Result Waiting timer + Discharge timer + Filling Start Delay timer）	
0055-0056	**40056-40057**	Previous bag weight	
0057-0058	**40058-40059**	Packing speed	
0059-0060	**40060-40061**	Flow rate	
0061	**40062**	Filling Start Delay	
0062~0099	**40063~40100**	Reserved	
Calibration paracontrollers (reserved **100~200**)			
0100	**40101**	unit	Initial value **: 1 ;** **0： g， 1： kg， 2： t , 3： lb (lbs)**
0101	**40102**	Decimal point	Initial value**:2;** Option：**0—0**；**1—1** ； **2—2** ； **3—3** ； **4—4**
0102	**40103**	Resolution	Initial value: **1** ; Optional: (**1/ 2/ 5/ 10/ 20/ 50**) .
0103-0104	**40104-40105**	Full Scale	Initial value: **10000** ; Write range (maximum range value minimum scale ≤ × **10 0000,** andnot more

			than **999,999)**
0105-0106	**4010640107**	Zero calibration	When writing **1** to the current weight as zero, the weighing is allowed to be written when the weighing platform is stable; the current zero millivolt is returned when reading.
0107-0108	**40108-40109**	Weight calibration	Enter the standard weight weight (≤ maximum range) ; Read as the current load cellrelative zero millivolts
0109-0110	**40110-40111**	Weightless Gain Calibration (Millivolts)	Write the millivolts corresponding to the gain weight, the controller is temporarily stored; **when reading, it returns the absolute millivolts corresponding to the current weight** (if the current millivolt is too small or too large, it cannot be calibrated and returns**0XFFFF** .).
0111-0112	**40112-40113**	No code gain calibration (weight)	Write and gain the weight value corresponding to millivolts. Before writing this value, you must first write the gain millivolts. When writing this register, use both to perform gain calibration. Returns **0000H** when read **.**
0113	**40114**	Load cell sensitivity	**3mV/V**
0114-0115	**40115-40116**	Controller load cell voltage	The multicontroller measures the voltage between **EX** + and **EX** - . (**Note 2**) **.**
0116-0117	**40117-40118**	Load cell maximum range	Initial value: **10000** ; (**Note 2**). Write range (maximum range value minimum scale ≤ × **10 0000,** andnot more than **999,999)**
0118-0119	**40119-40120**	Filling time	Initial Value:0.0s Write range:0~99.9s

0120-0121	**40121-40122**	Material calibration	Write the weight value corresponding to the gain millivolts;Press "manual discharge" to record the current relative millivolt, and use the two to calibrate the gain when writing this register; Return 0000H on read.
0122~0199	**40123~40200**	Reserved	
Weighing paracontroller(1)			
0200	**40201**	Stable range	Initial value : **2 ;** Stablerange **(0 ~9 9 d** optional **)**Unit: **d**
0201	**40202**	Stable Timer	Initialvalue: **0.3** ;range: **0.1~9.9**. (unit **s**)
0202	**40203**	Zero Range	Initial value: **50** ; Range : **1 -99**units: %
0203	**40204**	Zero Track Range	Initial value: **0** ; Range : **0-9**Unit: d
0204	**40205**	Zero Track Time	Initial value: **2.0** ; range:**0.1~99.9** . (unit **s**)
0205	**40206**	Sampling Rate （SPS）	Initial value: **2 ;** Optional: **0: 120** times / sec; **1**:**24 0** times / sec; **2**: **480** times / sec; **3: 960** times / sec.
0206~0249	**40207~40250**	Reserved	
System and communication paracontrollers - filter paracontrollers			
0250	**40251**	Digital Filter	Initial value: **7** ; Range: **0 to 9**
0251	**40252**	Advance Filter ON/OFF	Initial value: **0** ; **1** : On **0** : Off
0252	**40253**	Dynamic Filter	Initial value: **0** ; **1** : On ; **0** : Off
0253	**40254**	Filling Filter Level	Initial value: **2** ; Range: **0 to 9**
0254	**40255**	Waiting Process Filter	Initial value: **7** ; Range: **0 to 9**
0255	**40256**	Discharge Process Filter	Initial value: **1** ; Range: **0 to 9**
0256~0299	**40257~40300**	Reserved	
Weighing paracontroller （**3**）			
0300	**40301**	Power-Up Zero	Initial value: **0** ; **1** : On ; **0** : Off
0301	**40302**	Auto Zero Interval	Initial value: **0** ;

			Range : **0-99** has the bucket tocomplete the packing and then clear the current weight.
0302	**40303**	Running Stable Timeout	The initial value is **0** ; therange is **0 to 9 9.9 .** (unit **s**)
0303	**40304**	Result Checking Mode	Initial value: **0 ;** (range: **0** , **1**) **0 :** Stable Status ; **1 :** Delay Timer
0304	**40305**	Add toTotal When Manual Discharge	Initial value: **0** ; **1** : On ; **0** : Off
0305	**40306**	Result Holding	Initial value: **0** ; **1** : On ; **0** : Off
0306	**40307**	Adaptive Level	Initial value: **3** ; Range: **1 ~ 5**
0307	**40308**	Adaptive ON/OFF	Initial value: **0** ; Range: **0 ~ 2**
0308	**40309**	Manual clutch ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off
0309	**40310**	Bracket running control ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off
0310	**40311**	Hang bag running control ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off
0311	**40312**	Hang bag OFF logic ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off
0312	**40313**	Gross weight detect ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off
0313~0349	**40314~40350**	Reserved	
System and communication paracontrollers - structural paracontrollers			
0350	**40351**	Weigher Structure	Initial value: **0** ; **0 :** With Hopper; **1 :** No Hopper; **2 : PLC** mode; **3:** ton scale; **4 :** Valve scale.
0351	**40352**	Working Mode	Initial value **: 0 ;** **0:** single scale; **1:** Dual Scale: Master **;2:** Dual Scale: Slave
0352	**40353**	Packing Mode	Initial value: **1 ;** **0:** Gross ; **1:**Net
0353	**40354**	Hanger Movement Type	Initial value: **0 ;** **0** : Air Drive; **1** : Motor Drive
0354	**40355**	Filling Mode	Initial value: **1 ;** **0** : Solo Filling; **1** : Combination

			Filling
0355	**40356**	Dual Scale Unlock Bag Mode	Initial value: **0 ;** **0** : Asynchro Unlock; **1** : Synchro Unlock1; **2** : Synchro Unlock2.
0356	**40357**	Holder control ON/OFF	Initial value：0； 0：OFF；1：ON
0357~0499	**40358~40500**	Reserved	
Recipe paracontrollers – Value paracontrollers			
0500-500	**40501-40502**	Recipe ID	Initial value **1** ; range: **1 to 20**
0502-0503	**40503-40504**	Target	Weight value writing range : ≤**maximum range**
0504-0505	**40505-40506**	Coarse Flow Remains	
0506-0507	**40507-40508**	Medium Flow Remains	
0508-0509	**40509-40510**	Free Fall	
0510-0511	**40511-40512**	Near Zero Band	
0512-0513	**40513-40514**	Adaptive Level	Initial value **3** ; range: **1 to 5**
0514-0515	**40515-40516**	Adaptive ON/OFF	Initial value **0** ; range: **0 to 2**
0516~0549	**40517~40550**	Reserved	
Recipe paracontroller - time paracontroller			
0550	**40551**	Filling Start Delay	Initial value: **0. 5** ; range: **0 to99.9 .** (unit **s**)
0551	**40552**	COMP.Inhibit Timer(Co-F)	**.** Initial value: **09;** range: **0 to99.9.** (unit **s**)
0552	**40553**	COMP.Inhibit Timer(Me-F)	Initial value: **0. 9** ; range: **0 to99.9 .** (unit **s**)
0553	**40554**	COMP.Inhibit Timer(Fi-F)	Initial value: **0. 9** ; range: **0 to99.9 .** (unit **s**)
0554	**40555**	Result Waiting Timer	Initial value: **0. 5** ; range: **0 to99.9 .** (unit **s**)
0555	**40556**	Bag Locked Delay Timer	Initial value: **0. 5** ; range: **0 to99.9 .** (unit

			s)
0556	**40557**	Unlock Bag Pre-Delay Timer	Initial value: **0. 5** ; range: **0 to99.9 .** (unit **s**)
0557	**40558**	Discharge Delay Timer	Initial value: **0. 5** ; range: **0 to99.9 .** (unit **s**)
0558~0599	**40559~40600**	Reserved	
Over/Under Paracontroller			
0600	**40601**	OVER/UNDER ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off
0601	**40602**	OVER/UNDER Pause	Initial value: **0** ; **1** : On ; **0** : Off
0602	**40603**	OVER/UNDER Alarm Timer	Initial value: **10; range: 0 ~999.** (unit **s**)
0603-0604	**40604-40605**	Over Limit Value	Weight value writing range : ≤**max imum range**
0605-0606	**40606-40607**	Under Limit Value	
0607	**40608**	Compensation ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off.
0608	**40609**	Compensation Times	First: **1;** range: **1 ~ 99.**
0609	**40610**	Flow-ON Times	Initialvalue: **0.5**; range: **0 to 99 .9**. (unit **s**)
0610	**40611**	Flow-OFF Times	Initialvalue: **0.5**; range: **0 to 99 .9**. (unit **s**)
Auto Free Fall Correction Paracontroller			
0611	**40612**	Auto Free Fall Correction ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off .
0612	**40613**	Reference Samples PCS	Initial value: **1** ; Range: **1~99** .
0613	**40614**	Correction Effective Range	Range: **2.0** ; Range: **0 to 9.9** (unit: **%**)
0614	**40615**	Correction Percentage	Initial value: **1** ; Optional: **0--100 %** correction; **1--50%** correction; **2 - 25%**correction .

Jog Flow Paracontroller			
0615	**40616**	Jog Flow ON/OFF	Initial value: **0**; **1**: On; **0**: Off.
0616	**40617**	Jog Flow-ON Timer	Initial value: **0.5**; range: **0 to9.9**. (unit **s**)
0617	**40618**	Jog Flow-OFF Timer	Initial value: **0.5**; range: **0 to9.9**. (unit **s**)
With Hopper Paracontroller			
0618	**40619**	Single scale combination Times	First: **1;** range: **0 ~ 99.**
0619~0649	**40620~40650**	Reserved	
No Hopper Scale Paracontroller			
0650	**40651**	Next Lock Bag Start Delay Time	Initial value: **4.0**; range: **0 to 99 .9**. (unit **s**)
0651~0699	**40652~40700**	Reserved	
PLC Paracontroller			
0700-0701	**40701-40702**	PLC-OverLimit Value	**0 ~ Full Scale**
0702-0703	**40703-40704**	PLC-UnderLimit Value	**0 ~ Full Scale**
0704-0705	**40705-40706**	PLC-UpperLimit Value	**0 ~ Full Scale**
0706-0707	**40707-40708**	PLC-LowerLimit Value	**0 ~ Full Scale**
0708~0749	**40709~40750**	Reserved	
Ton Scale Paracontroller			
0750	**40751**	Hang Up Bag Delay	Initialvalue: **0.5**; range: **0 to 99.9**. (unit **s**)
0751	**40752**	Auto Hanger ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off
0752	**40753**	Delay Before Hanger Rise	Initial **value: 5.0;** range: **0 ~ 99.9.** (unit **s**)
0753	**40754**	Delay Before Hanger Drop	Initial **value: 5.0;** range: **0 ~ 99.9.** (unit **s**)
0754	**40755**	Hanger Rise Time Limitation	Initial **value: 5.0;** range: **0 ~ 99.9.** (unit **s**)
0755	**40756**	Hanger Drop Time	Initial **value: 5.0;** range: **0 ~ 99.9.** (

		Limitation	unit **s**)
0756	**40757**	Fan Rotating Time	Initialvalue: **0.5**; range: **0 to 99.9**. (unit **s**)
0757	**40758**	Decoupled up ON/OFF	Initial value: **0**; **1**: On; **0**: Off.
0758	**40759**	Uncoupled alarm ON/OFF	Initial value: **0**; **1**: On; **0**: Off.
0759	**40760**	Hang bag reset delay	Initialvalue: **0.0**; range: **0 to 99.9**. (unit **s**)
0760	**40761**	Blow	Initial value: 0. 0: Uplink delay before blowing 1: Uplink delay after blowing
0761	**40762**	Selection of return valve mode	Initial value: 0; 0: Close the return valve after filling; 1: close the return valve after unlock bag
0762	**40763**	Second unlink delay	Initialvalue: **0.0**; range: **0 to 99.9**. (unit **s**)
0763	**40764**	Second unlink timer	Initialvalue: **0.0**; range: **0 to 99.9**. (unit **s**)
0764	**40765**	Second uplink pause timer	Initialvalue: **0.0**; range: **0 to 99.9**. (unit **s**)
0765	**40766**	Conveyor reversal timer	Initialvalue: **0.0**; range: **0 to 99.9**. (unit **s**)
0766	**40767**	Weight value of decoupling alarm	0~maximum range
0767	**40768**		
0767~0799	**40769~40800**	Reserved	
Valve Scale Paracontroller			
0800	**40801**	Delay Before Lifting Bag	Initialvalue **: 0.5** ; range: **0 to 99.9** . (unit **s**)
0801	**40802**	Lifting Bag Timer	Initialvalue **: 0.5** ; range: **0 to 99.9** . (unit **s**)
0802	**40803**	Delay Before Pusing Bag	Initialvalue **: 0.5** ; range: **0 to 99.9** . (unit **s**)
0803	**40804**	Pushing Bag Timer	Initialvalue **: 0.5** ; range: **0 to 99.9** . (unit **s**)
0804~0999	**40805~41000**	Reserved	

Patting Paracontroller (reserved **1000~1200**)			
1000	**41001**	Patting Mode	Initial value: **0** ; Optional: **0** : Disable ; **1 :** After Waiting ; **2 :** When Filling ; **3:** All time . With Hopper Can Write: **0,1 ;** No Hopper Can Write: **0~3 .**
1001-1002	**41002-41003**	Start-Up Weight	Initialvalue: **0** ; Range: **0** ~Maximum range.
1003	**41004**	Patting Times(Filling)	Initial value: **0** ; range: **0~99** . Set the paracontrollers for the number of shots in the fill .
1004	**41005**	Patting Times(Waiting)	Initial value: **4** ; Range: **0~99** . Set the paracontrollers for the number of shots after the value is set .
1005	**41006**	Patting Start Delay Timer	Initial value: **0.5** ; range **: 0~99.9**. (unit **s**) After the bag is started , the bag output is valid after this delay time.
1006	**41007**	Patting ON Timer	Initial value: **0.5** ; range: **0~99.9**. (unit **s**) During the on-off cycle of the bag, the bag output valid time.
1007	**41008**	Patting OFF Timer	Initial value: **0.5** ; range **: 0~99.9**. (unit **s**) In the on-off cycle of the bag, the bag output invalid time.
1008	**41009**	Extra ON Timer	Initialvalue: **0** ; range **: 0~99.9** .(unit **s**)
1009~1019	**41010~41020**	Reserved	
Coding Paracontroller			
1020	**41021**	Coding Device ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off .
1021	**41022**	Coding Start Delay Timer	Initialvalue: **0. 5** ; range: **0 to 99 .9** . (unit **s**)

1022	**41023**	Coding Duration Timer	Initialvalue: **0. 5** ; range: **0 to 99 .9** . (unit **s**)
1023	**41024**	Not Allow Fill/Discharge When Coding	Initial value: **0 ;** **0** : The discharge output or the fill output is allowed to start during the coding process; **1** : The discharge output or fill output is not allowed to start during the coding process.
1024~1029	**41025~41030**	Reserved	
Sewing Paracontroller			
1030	**41031**	Sewing Start Delay Timer	Initialvalue: **0. 5**; range: **0 to 99 .9**. (unit **s**)
1031	**41032**	Sewing ON Timer	Initialvalue: **4.0**; range: **0 to 99 .9**. (unit **s**)
1032	**41033**	Cutter ON Timer	Initialvalue: **0. 5**; range: **0 to 99 .9**. (unit **s**)
1033	**41034**	Sewing Stop Delay	Initialvalue: **0. 5**; range: **0 to 99 .9**. (unit **s**)
1034	**41035**	Cutter Start Delay	Initialvalue: **0. 5**; range: **0 to 99 .9**. (unit **s**)
1035	**41036**	Sewing machine ON/OFF	Initialvalue：**0**；**1**：ON；**0**：OFF
1036	**41037**	Sewing machine shaking time	Initialvalue：**0.3**；range：**0～99.9**。
1037~1039	**41038~41040**	Reserved	
Discharge Patting Paracontroller			
1040	**41041**	Discharge Patting ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off .
1041	**41042**	Discharge ON Timer	Initialvalue: **2. 0** ; range: **0 to9.9** . (unit **s**)
1042	**41043**	Discharge Patting ON Timer	Initialvalue: **0. 5** ; range: **0 to9.9** . (unit **s**)
1043	**41044**	Discharge Patting OFF Timer	Initialvalue: **0. 5** ; range: **0 to9.9** . (unit **s**)
1044	**41045**	Discharge Patting Times	Initial value: **10** ; Range: **0 to 99 .**

1045~1049	**41046~41050**	Reserved	
Overtime alarm paracontroller			
1050	**41051**	Overtime Checking ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off .
1051	**41052**	Coarse Flow Overtime	Initialvalue: **5.0 ;** range: **0 to 99 .9** . (unit **s**)
1052	**41053**	Medium Flow Overtime	Initialvalue: **5.0 ;** range: **0 to 99 .9** . (unit **s**)
1053	**41054**	Manual Fine Overtime	Initialvalue: **5.0 ;** range: **0 to 99 .9** . (unit **s**)
1054	**41055**	Discharge Overtime	Initialvalue: **5.0 ;** range: **0 to 99 .9** . (unit **s**)
1055~1059	**41056~41060**	Reserved	
Auxiliary Pulse Paracontroller			
1060	**41061**	Auxiliary Pulse 1 Execute Total Timer	Initial value: **0.0** ; Range: **0 to 9 9 9.9** . (unit **s**)
1061	**41062**	Auxiliary Pulse 1 ON Timer	Initial value: **10.0** ; Range: **0 to 9 9 9.9** . (unit **s**)
1062	**41063**	Auxiliary Pulse 1 OFF Timer	Initial value: **10.0** ; Range: **0 to 9 9 9.9** . (unit **s**)
1063	**41064**	Auxiliary Pulse 2 Execute Total Timer	Initial value: **0.0** ; Range: **0 to 9 9 9.9** . (unit **s**)
1064	**41065**	Auxiliary Pulse 2 ON Timer	Initial value: **10.0** ; Range: **0 to 9 9 9.9** . (unit **s**)
1065	**41066**	Auxiliary Pulse 2 OFF Timer	Initial value: **10.0** ; Range: **0 to 9 9 9.9** . (unit **s**)
1066	**41067**	Auxiliary Pulse 3 Execute Total Timer	Initial value: **0.0** ; Range: **0 to 9 9 9.9** . (unit **min**)
1067	**41068**	Auxiliary Pulse 3 ON Timer	Initial value: **10.0** ; Range: **0 to 9 9 9.9** . (unit **min**)
1068	**41069**	Auxiliary Pulse 3 OFF Timer	Initial value: **10.0** ; Range: **0 to 9 9 9.9** . (unit **min**)
1069	**41070**	Auxiliary Pulse 4 Execute Total	Initial value: **0.0** ; Range: **0 to 9 9 9.9** . (unit **min**)

		Timer	
1070	**41071**	Auxiliary Pulse 4 ON Timer	Initial value: **10.0** ; Range: **0 to 9 9 9.9** . (unit **min**)
1071	**41072**	Auxiliary Pulse 4 OFF Timer	Initial value: **10.0** ; Range: **0 to 9 9 9.9** . (unit **min**)
1072	**41073**	Auxiliary Pulse 1	Initial value：0； 0—Pulse Mode , 1—Level Mode
1073	**41074**	Auxiliary Pulse 2	
1074	**41075**	Auxiliary Pulse 3	
1075	**41076**	Auxiliary Pulse 4	
1076	**41077**	Auxiliary Pulse ON/OFF	Initial value: **0** , **1** : On ; **0** : Off
1077~1079	**41078~41080**	Reserved	
Conveyor Paracontroller			
1080	**41081**	Conveyor ON/OFF	Initial value: **0** ; **1** : On ; **0** : Off .
1081	**41082**	Conveyor Start Delay Timer	Initialvalue: **0. 5** ; range: **0 to 99 .9** . (unit **s**)
1082	**41083**	Conveyor Running Timer	Initialvalue: **4.0** ; range: **0 to 99 .9** . (unit **s**)
1083	**41084**	Conveyor **2**/**3** Max running timer	Initialvalue：**30.0**；range：**0～99.9**
1084~1089	**41085~41090**	Reserved	
Print Paracontroller			
1090	**41091**	Auto Print	Initial value: **0** , **1** : On ; **0** : Off
1091	**41092**	Printer Format	Initial value : **0** ; **0** : **24** columns printing ; **1** :**32** colu mns printing .
1092	**41093**	Printing Language	Initialvalue : **0** ; **0** : Chinese; **1**: **E n glish .**
1093	**41094**	Printing Line Nos.	Initial value: **3** ; Range: **0 to 9 .**
1094~1199	**41095~41200**	Reserved	
User Logic- **1** (User Logic-1-6 reserved **1200~1400**)			
1200	**41201**	Logic Type	Initial value : **0** ; range **0~5** . **0** : CLOSE **1** : Delay on **2** : Delay OFF **3** : Delay ON & Delay OFF

			4 : OFF-ON,Edge Trigger **5** : ON-OFF,Edge Trigger
1201	**41202**	Trigger Define	Initial value : **0** ; range: **0~64** . Can be selected from the definition of the trigger input port , fixed digital input port**1~12** , digital output definition, weight value trigger.
1202	**41203**	Trigger Input Port	Initial value : **0** ; range **0~12** . Select the digital input port **0~12**corresponding to this function signal , and input port **0** means that this function is not defined.
1203	**41204**	Output Port	Initial value : **0** ; range **0~16** . Select the digital output port**0~16** corresponding to the function signal , and the output port- **0** means that the function is not defined.
1204	**41205**	Delay ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is valid, the logic output signal is valid after the delay.
1205	**41206**	Delay OFF Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is invalid, the logic output signal will be invalid after the delay.
1206	**41207**	Output ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) The duration after the logic output signal is valid, and becomes invalid after the end of the time.
1207-1208	**41208-41209**	Trigger Weight	Initial value: **0** ; Range:**0~999999** When the trigger signal selects "Threshold Weight", the current

			weight is compared to this value.
1209~1219	**41210~41220**	Reserved	
User Logic- **2**			
1220	**41221**	Logic Type	Initial value : **0** ; range **0~5** . **0** : CLOSE **1** : Delay on **2** : Delay OFF **3** : Delay ON & Delay OFF **4** : OFF-ON,Edge Trigger **5** : ON-OFF,Edge Trigger
1221	**41222**	Trigger Define	Initial value : **0** ; range: **0~64** . Can be selected from the definition of the trigger input port , fixed digital input port**1~12** , digital output definition, weight value trigger.
1222	**41223**	Trigger Input Port	Initial value : **0** ; range **0~12** . Select the digital input port **0~12**corresponding to this function signal , and input port **0** means that this function is not defined.
1223	**41224**	Output Port	Initial value : **0** ; range **0~16** . Select the digital output port**0~16** corresponding to the function signal , and the output port- **0** means that the function is not defined.
1224	**41225**	Delay ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is valid, the logic output signal is valid after the delay.
1225	**41226**	Delay OFF Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is invalid, the logic output signal will be invalid after the delay.

1226	**41227**	Output ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) The duration after the logic output signal is valid, and becomes invalid after the end of the time.
1227-1228	**41228-41229**	Trigger Weight	Initial value: **0** ; Range: **0~999999** When the trigger signal selects "Threshold Weight", the current weight is compared to this value.
1229~1239	**41230~41240**	Reserved	
User Logic- **3**			
1240	**41241**	Logic Type	Initial value : **0** ; range **0~5** . **0** : CLOSE **1** : Delay on **2** : Delay OFF **3** : Delay ON & Delay OFF **4** : OFF-ON,Edge Trigger **5** : ON-OFF,Edge Trigger
1241	**41242**	Trigger Define	Initial value : **0** ; range: **0~64** . Can be selected from the definition of the trigger input port , fixed digital input port**1~12** , digital output definition, weight value trigger.
1242	**41243**	Trigger Input Port	Initial value : **0** ; range **0~12** . Select the digital input port **0~12**corresponding to this function signal , and input port **0** means that this function is not defined.
1243	**41244**	Output Port	Initial value : **0** ; range **0~16** . Select the digital output port**0~16** corresponding to the function signal , and the output port- **0** means that the function is not defined.
1244	**41245**	Delay ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**)

			After the trigger signal is valid, the logic output signal is valid after the delay.
1245	**41246**	Delay OFF Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is invalid, the logic output signal will be invalid after the delay.
1246	**41247**	Output ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) The duration after the logic output signal is valid, and becomes invalid after the end of the time.
1247-1248	**41248-41249**	Trigger Weight	Initial value: **0** ; range: **0~999999.** When the trigger signal selects "Threshold Weight", the current weight is compared to this value.
1249~1259	**41250~41260**	Reserved	
User Logic- **4**			
1260	**41261**	Logic Type	Initial value : **0** ; range **0~5** . **0** : CLOSE **1** : Delay on **2** : Delay OFF **3** : Delay ON & Delay OFF **4** : OFF-ON,Edge Trigger **5** : ON-OFF,Edge Trigger
1261	**41262**	Trigger Define	Initial value : **0** ; range: **0~64** . Can be selected from the definition of the trigger input port , fixed digital input port**1~12** , digital output definition, weight value trigger.
1262	**41263**	Trigger Input Port	Initial value : **0** ; range **0~12** . Select the digital input port **0~12**corresponding to this function signal , and input port **0** means that this function is not defined.

1263	**41264**	Output Port	Initial value : **0** ; range **0~16** . Select the digital output port**0~16** corresponding to the function signal , and the output port- **0** means that the function is not defined.
1264	**41265**	Delay ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is valid, the logic output signal is valid after the delay.
1265	**41266**	Delay OFF Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is invalid, the logic output signal will be invalid after the delay.
1266	**41267**	Output ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) The duration after the logic output signal is valid, and becomes invalid after the end of the time.
1267-1268	**41268-41269**	Trigger Weight	Initial value: **0** , range:**0~999999 .** When the trigger signal selects "Threshold Weight", the current weight is compared to this value.
1269~1279	**41270~41280**	Reserved	
User Logic- **5**			
1280	**41281**	Logic Type	Initial value: **0**; range **0~5**. **0** : CLOSE **1** : Delay on **2** : Delay OFF **3** : Delay ON & Delay OFF **4** : OFF-ON,Edge Trigger **5** : ON-OFF,Edge Trigger
1281	**41282**	Trigger Define	Initial value : **0** ; range: **0~64** . Can be selected from the definition of the trigger input port , fixed digital input port**1~12** , digital

			output definition, weight value trigger.
1282	**41283**	Trigger Input Port	Initial value : **0** ; range **0~12** . Select the digital input port **0~12**corresponding to this function signal , and input port **0** means that this function is not defined.
1283	**41284**	Output Port	Initial value : **0** ; range **0~16** . Select the digital output port**0~16** corresponding to the function signal , and the output port- **0** means that the function is not defined.
1284	**41285**	Delay ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is valid, the logic output signal is valid after the delay.
1285	**41286**	Delay OFF Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is invalid, the logic output signal will be invalid after the delay.
1286	**41287**	Output ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) The duration after the logic output signal is valid, and becomes invalid after the end of the time.
1287-1288	**41288-41289**	Trigger Weight	Initialvalue: **0** ; Range: **0**~Maximum range. When the trigger signal selects "Threshold Weight", the current weight is compared to this value.
1289~1299	**41290~41300**	Reserved	
User Logic- **6**			
1300	**41301**	Logic Type	Initial value: **0**; range **0~5**. **0** : CLOSE

			1 : Delay on **2** : Delay OFF **3** : Delay ON & Delay OFF **4** : OFF-ON,Edge Trigger **5** : ON-OFF,Edge Trigger
1301	**41302**	Trigger Define	Initial value: **0**; range: **0~64**. Can be selected from the definition of the trigger input port, fixed digital input port**1~12** , digital output definition, weight value trigger.
1302	**41303**	Trigger Input Port	Initial value: **0**; range **0~12**. Select the digital input port **0~12**corresponding to this function signal, and input port **0** means that this function is not defined.
1303	**41304**	Output Port	Initial value: **0**; range **0~16**. Select the digital output port 0~16 corresponding to the function signal, and the output port- **0** means that the function is not defined.
1304	**41305**	Delay ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is valid, the logic output signal is valid after the delay.
1305	**41306**	Delay OFF Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) After the trigger signal is invalid, the logic output signal will be invalid after the delay.
1306	**41307**	Output ON Timer	Initial value : **0** ; range: **0~99.9 .**(unit **s**) The duration after the logic output signal is valid, and becomes invalid after the end of the time.

1307-1308	**41308-41309**	Trigger Weight	Initial value: **0** ; range: **0~999999.** When the trigger signal selects "Threshold Weight", the current weight is compared to this value.
1309~1399	**41310~41400**	Reserved	
Motor paracontrollers - filling mode (reserved 1400~1600)			
1400	**41401**	Current Filler Motor Cfg ID	Initial value: **0** ; Range: **0~4**
1401	**41402**	Filling Mode	Initial value **: 0** ; Optional: **0** : Air Drive ; **1** : Step Motor Drive; **2** : Motor Drive.
1402	**41403**	Filler Gate Close Overtime	Initial value: **4.0** ; range: **0~99.9.** (unit **s**)
1403	**41404**	Filler Gate Limit Signal Type	Initial value: **0** ; Optional: **0** : In Position When Have Signal; **1** : In Position When No Signal
1404	**41405**	Filler Motor Cfg ID	Initial value: **0** , range: **0~4**
1405	**41406**	Filler Motor Frequency	Initialvalue : **12000** , range:**1~50000Hz**
1406-1407	**41407-41408**	Steps For Filler Open to Fi-F	Initialvalue : **1800** ; range:**1~60000 .**
1408-1409	**41409-41410**	Steps For Filler Open to Me-F	Initialvalue : **4300** ; range:**1~60000 .**
1410-1411	**41411-41412**	Steps For Filler Open to Co-F	Initialvalue : **7750** ; range:**1~60000 .**
1412	**41413**	Filler Motor DR	Initial value : **0** ; Optional: **0** : Gate Open When Signal ON ; **1** : Gate Open When Signal OFF
1413	**41414**	Filler Motor Start Frequency	Initial value : **2000** ; Range: **0~50000Hz** (This value should preferably not be greater than the filling motor

			frequency)
1414	**41415**	Filler Motor ACC Time	Fill motor acceleration time Initial value: **200** ; Range: **0~9999**. (unit **s**)
1415	**41416**	Filler Motor DEC Time	Fill motor deceleration time Initial value: **50** ; Range: **0~9999**. (in **ms**)
1416	**41417**	Co-F,Gate Open Time	Initial value: **0.80** ; Range: **0~99.99**. (unit **s**)
1417	**41418**	Me-F,Gate Open Time	Initial value: **0.40** ; Range: **0~99.99 .** (unit **s**)
1418	**41419**	Fi-F,Gate Open Time	Initial value: **0.20** ; Range: **0~99.99** . (unit **s**)
1419	**41420**	Lock Mode	Initial value: **0** ; Optional: **0** : Air Drive **1** : Step Motor Drive **2** : MotorDrive Dual-Limit; **3** : MotorDrive Single-Limit .
1420	**41421**	Bag Release Overtime	Initial value: **3.0** ; Range: **0** ~ **99.9 .** (unit **s**)
1421	**41422**	Bag Lock Overtime	Initial value: **3.0 ;** range: **0~99.9 .** (unit **s**)
1422	**41423**	Clutch Limit Signal Type	Initial value: **0 ;**Optional: **0** : In Position When Have Signal **1** : In Position When No Signal.
1423	**41424**	Clutch Lock Frequency	Initial value: **30000** ; Range: **1~50000 Hz .**
1424	**41425**	Clutch Release Frequency	Initial value: **20000 ;** range: **1~50000 Hz .**
1425-1426	**41426-41427**	Steps to Lock Bag	Initial value: **12000** ; range: **1~60000 .**
1427	**41428**	Clutch Motor DR	Initial value: **0** ; Optional: **0** : Lock Bag When Signal OFF; **1** : Lock Bag When Signal ON.
1428	**41429**	Clutch Motor Start	Initial value: **2000 ;** range: **0** ~

		Frequency	**50000 Hz .** (This value cannot be greater than the pocket frequency)
1429	**41430**	Clutch Motor ACC Time	Initial value: **200** ; Range: **0~9999**. (in **ms**)
1430	**41431**	Clutch Motor DEC Time	Initial value: **50** ; Range: **0~9999** (in **ms**) **.**
1431	**41432**	Bag Release Time	Initial value: **0.5**, range: **0~99.99**. (unit **s**)
1432	**41433**	Discharge mode	Initial value: pneumatic mode; **0** , Air Drive; **1.** Step Motor Drive **2** , MotorDrive Single-Limit; **3** , MotorDrive Dual-Limit; **4.** MotorDrive Rotating.
1433	**41434**	DISC Gate Close Overtime	Initial value: **3.0**; range: **0 ~ 99.9**. (unit **s**)
1434	**41435**	DISC Gate Open Overtime	Initial value : **3.0** ; range: **0 ~ 99 .9 .** (unit **s**)
1435	**41436**	DISC Gate Limit Signal Type	Initial value: **0** ; Optional: **0** , In Position When Have Signal. **1.** In Position When No Signal.
1436	**41437**	Realtime Detecting When Discharge	Initial value : **0** ; **0** : off ; **1** : on.
1437	**41438**	DISC Motor Open Frequency	Initial value : **30000** ; range: **1~50000** (**Hz**) **.**
1438	**41439**	DISC Motor Close Frequency	Initial value : **20000** ; range: **1~50000** (**Hz**) **.**
1439-1440	**41440-41441**	Discharge Steps	Initial value : **12000** ; range: **1~60000 .**
1441	**41442**	DISC Motor DR	Initial value : **0** ; Optional: **0** : Gate Open When Signal OFF **1:** Gate Open When Signal ON
1442	**41443**	DISC Motor Start	Initial value**: 2000**; range**: 1~50000**

		Frequency	
1443	**41444**	DISC Motor ACC Time	Initial value：**200**；range：**0~9999**
1444	**41445**	DISC Motor DEC Time	Initial value：**50**；range：**0~9999**
1445	**41446**	DISC Gate Open Timer	Initial value：**1.00**；range：**0~99.99**
1446	**41447**	Filling motor returns to zero frequency	Initial value：**2000**；range：**0~50000**
1447	**41448**	Unlock bag motor power back to zero frequency	Initialvalue：**2000**；range：**0~50000**
1448	**41449**	Discharging motor power back to the original zero frequency	Initial value：**2000**；range：**0~50000**
1449~1599	**41450~41600**	Reserved	
Communication paracontrollers - serial port **2** paracontrollers (reserved **1600~1700**) **485**			
1600	**41601**	Communication ID	Initial value: **1** ; **1 ~ 9 9** optional.
1601	**41602**	Communication Mode	**0** : **Modbus-RTU** ; **1** : Printing Mode **2** : continuous mode **3** : **MD-R** (compatible with **01.** version)
1602	**41603**	Baud rate	**0** : **9600** **1** : **119200** **2** : **38400** **3** : **57600** **4** : **115200**
1603	**41604**	Data Format	Communication data format selection (data bit, parity bit, stop bit. **E** : even parity; **N** : no parity) **0** : **8-E-1** **1** : **8-N-1** **2** : **7-E-1**

			3 : **7-N-1**
1604	**41605**	Dword Format	Initial value : **0 :** Range : **0-1** **0 : AB-CD**; **1**: CD-**AB**.
Communication paracontrollers - serial port **1** paracontrollers **232**			
1605	**41606**	Communication ID	Initial value: **1**; **1 ~ 9 9** optional.
1606	**41607**	Communication Mode	**0** : **Modbus-RTU** ; **1** : Printing Mode **2** : continuous mode **3** : **MD-R** (compatible with **01.** version)
1607	**41608**	Baud rate	**0** : **9600** **1** : **119200** **2** : **38400** **3** : **57600** **4** : **115200**
1608	**41609**	Data Format	Communication data format selection (data bit, parity bit, stop bit. **E** : even parity; **N** : no parity) **0** : **8-E-1** **1** : **8-N-1** **2** : **7-E-1** **3** : **7-N-1**
1609	**41610**	Dword Format	Initial value : **0 :** Range : **0-1** **0 : AB-CD**; **1**: CD-**AB**.
Communication paracontrollers - Ethernet Interface paracontrollers			
1610	**41611**	Dword Format	Initial value : **0 :** Range : **0-1** **0 : AB-CD**; **1**: CD-**AB**.
1611	**41612**	Server Port	Initial value: **502 ;** Range: **1 ~ 65535**
1612	**41613**	IP-address	Initial value: **192.168.1 01**. **246**. Range: **0 ~ 255**.
1613	**41614**		
1614	**41615**		
1615	**41616**		

1616~1699	**41617~41700**	Reserved	
I/O Module custom paracontrollers (reserved 1800~1900)			
1700	**41701**	Digital input port **1**definition	Write the corresponding value of the function.If the input port 3 is defined as running, write 1 at address 41703 (refer to 4.8.1 output and input definition table code for numeric function code) Read: return the current switching value custom state
1701	**41702**	Digital input port **2**definition	
1702	**41703**	Digital input port **3**definition	
1703	**41704**	Digital input port **4**definition	
1704	**41705**	Digital input port **5**definition	
1705	**41706**	Digital input port **6**definition	
1706	**41707**	Digital input port **7**definition	
1707	**41708**	Digital input port **8**definition	
1708	**41709**	Digital input port **9**definition	
1709	**41710**	Digital input port **10**definition	
1710	**41711**	Digital input port **11**definition	
1711	**41712**	Digital input port **12**definition	
1712	**41713**	ON/OFF output port **1**definition	Write the corresponding value of the function.If the output port 3 is defined as running, write 1 at address 41715 (refer to 4.8.1 output and input definition table code for numeric function code).
1713	**41714**	ON/OFF output port **2**definition	
1714	**41715**	ON/OFF output port **3**definition	
1715	**41716**	ON/OFF output port **4**definition	
1716	**41717**	ON/OFF output port **5**definition	
1717	**41718**	ON/OFF output	

		port **6**definition	
1718	**41719**	ON/OFF output port **7**definition	
1719	**41720**	ON/OFF output port **8**definition	
1720	**41721**	ON/OFF output port **9**definition	
1721	**41722**	ON/OFF output port **10**definition	
1722	**41723**	ON/OFF output port **11**definition	
1723	**41724**	ON/OFF output port **12**definition	
1724	**41725**	ON/OFF output port **13**definition	
1725	**41726**	ON/OFF output port **14**definition	
1726	**41727**	ON/OFF output port **15**definition	
1727	**41728**	ON/OFF output port **16**definition	
1728	**41729**	Start / end ON/OFF test	write: The stop state can be written. Write **1 to** start the ON/OFF test. Write **0** to exit the ON/OFF test state.
1729	**41730**	Input test	Write: not allowed to write Read: From the low to the high, the corresponding port **IN1~12** input. **1** is valid for input, **0** is invalid for input.
1730-1731	**41731-41732**	Output test	Write: The ON/OFF test ON/OFF can be written in the open state, and the output from the low to the high port corresponds to the port **OUT1~16**. **1** is valid for

			output, **0** is invalid for output. Read: Returns the status of the current output ON/OFF port, from the low to the high, respectively, corresponding to the port **OUT1~16** output. **1** is valid for output, **0** is invalid for output.
1732~1799	**41733~41800**	Reserved	
Other paracontroller settings (reserved **1900~2000**)			
1800	**41801**	Print Total ACUM	Read as **0** Write **1** , Print Total ACUM
1801	**41802**	Print recipe ACUM	Read as **0** Write **100** to print the current recipe ACUM Write **1-20** , print the corresponding formula ACUM Write **101** to Print All Recipe ACUM
1802	**41803**	Print user ACUM	Read as **0** Write **100** to Print Choose User ACUM Write **0-9** , print the corresponding user ACUM Write **101** , Print All User ACUM
1803	**41804**	reset	**8800** Reset All(Including Calibration) **8801** Reset All(Except Calibration) **8802** Reset Recipe Paracontroller **8803** Reset Sys&Com Paramter **8804** Reset Peripherals Paracontroller **8805** Reset Motor Paracontroller **880 6** Reset Calibration Paracontroller **880 7** Reset I/O Module **880 8** Reset User Logic Paracontroller **8809** Reset

			communicate paracontroller
1804	**41805**	backup	read: 0: No Backup Data; 1: Have Backup Data. write: Write **9900** to Execute Paracontroller Backup; Write **9901 to** Execute Recovery From Backup Write **9902 to** p Execute Delete Backup.
1805-1806	**41806-41807**	Backup date	Read only
1807-1808	**41808-41809**	Backup time	
1809	**41810**	year	**0-99**
1810	**41811**	month	**1-12**
1811	**41812**	day	**1-31**
1812	**41813**	Time	**0-23**
1813	**41814**	Minute	**0-59**
1814	**41815**	second	**0-59**
1815	**41816**	Clear All Recipes ACUM	Write **1** clear total accumulation
1816	**41817**	Clear recipe ACUM	Write **1-20 to** clear the Recipe ID ACUM; Write **100 to** Clear Choose Recipe ACUM; Write **10**1 to Clear All Recipe ACUM.

1817	**41818**	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.
1818	**41819**	User ID	Read out current ID, paracontroller ready only
1819-1949	**41820-41950**	Reserved	
Batch setting			
1950	**41951**	Batch	Initial value：**0**；range：**0~9999**。
1951	**41952**	Remain PCS	Read only
1952~1999	**41953~42000**	Reserved	
Formula target value (reserved **2000~2300**)			
2000-2001	**42001-42002**	Recipe **1** target	Initial value: **0**.
2002-2003	**42003-42004**	Recipe **2** target	Initial value: **0**.
……		**……**	Initial value: **0**.
2038-2039	**42039-42040**	Recipe **20** target	Initial value: **0**.
Cumulative weight			
2040-2041	**42041-42042**	Total cumulative weight is **6**digits	
2042-2043	**42043-42044**	The total cumulative weight low **9**	
2044-2045	**42045-42046**	Total accumulated number of packets	
2046-2047	**42047-42048**	Formula **1**cumulative weight is **6**digits high	
2048-2049	**42049-42050**	Formulation **1**cumulative weight low **9**	
2050-2051	**42051-42052**	Formula **1**cumulative count	
……		**……**	
2160-2161	**42161-42162**	Formulation **6**High **20**cumulative weight	
2162-2163	**42163-42164**	Formulation**20** cumulative weight low **9**	
2164-2165	**42165-42166**	Formula **20** cumulative times	
User cumulative weight and number of times			
2166-2167	**42167-42168**	User **0**cumulative weight is **6**digits high	
2168-2169	**42169-42170**	User **0**cumulative weight is **9**digits lower	
2170-2171	**42171-42172**	User **0**cumulative times	
2172-2173	**42173-42174**	User **1**cumulative weight is **6**digits high	
2174-2175	**42175-42176**	User **1**cumulative weight is **9**digits lower	
2176-2177	**42177-42178**	User **1**cumulative times	

2178-2179	**42179-42180**	User **2**cumulative weight is **6**digits high	
2180-2181	**42181-42182**	User **2**cumulative weight is **9**digits lower	
2182-2183	**42183-42184**	User **2**cumulative times	
2184-2185	**42185-42186**	User **3**cumulative weight is **6**digits high	
2186-2187	**42187-42188**	User **3**cumulative weight is **9**digits lower	
2188-2189	**42189-42190**	User **3**cumulative times	
2190-2191	**42191-42192**	User **4**cumulative weight is **6**digits high	
2192-2193	**42193-42194**	User **4**cumulative weight is **9**digits lower	
2194-2195	**42195-42196**	User **4**cumulative times	
2196-2197	**42197-42198**	User **5**cumulative weight is **6**digits high	
2198-2199	**42199-42200**	User **5**cumulative weight is **9**digits lower	
2200-2201	**42201-42202**	User **5**cumulative times	
2202-2203	**42203-42204**	User **6**cumulative weight is **6**digits high	
2204-2205	**42205-42206**	User **6**cumulative weight is **9**digits lower	
2206-2207	**42207-42208**	User **6**cumulative times	
22082209	**42209-42210**	User **7**cumulative weight is **6**digits high	
2210-2211	**42211-42212**	User **7**cumulative weight is **9**digits lower	
2212-2213	**42213-42214**	User **7**cumulative times	
2214-2215	**42215-42216**	User **8**cumulative weight is **6**digits high	
2216-2217	**42217-42218**	User **8**cumulative weight is **9**digits lower	
2218-2219	**42219-42220**	User **8**cumulative times	
2220-2221	**42221-42222**	User **9**cumulative weight is **6**digits high	
2222-2223	**42223-42224**	User **9**cumulative weight is **9**digits lower	
2224-2225	**42225-42226**	User **9**cumulative times	
2226~2299	**42227~42300**	Reserved	
Compile information (reserved 9000~9100)			
9000-9001	**49001-49002**	Logic Version	For example **: 0 1000 0**
9002-9003	**49003-49004**	Logic Compile Date	For example **: 161201**
9004-9005	**49005-49006**	Logic Compile Time	For example **: 130805**
9006-9007	**49007-49008**	IO Board Version	For example **: 100**
9008~9099	**49009~49100**	Reserved (reserved **9100~9200**)	
Coil address (reserved **0~100**)			
0	**00001**	Start	
1	**00002**	Emergency stop	

2	**00003**	stop	Write ： **FF00H** =Valid （Only write **FF00H**）; Read：**0001H** = On **0000H** = Off
3	**00004**	Pause	
4	**00005**	Zeroing	
5	**00006**	Clear Alarm	
6	**00007**	Lock/Unlock Request	
7	**00008**	Change Recipe	
8	**00009**	Manual Fine Flow	
9	**00010**	Manual Coarse Flow	
10	**00011**	Manual Discharge	
11	**00012**	Manual Empty Material	
12	**00013**	Hanging bag	
13	**00014**	Sewing Input	
14	**00015**	Sewing Emergency Stop	
15	**00016**	Auxiliary PU Input **1**	
16	**00017**	Auxiliary PU Input **2**	
17	**00018**	Auxiliary PU Input **3**	
18	**00019**	Auxiliary PU Input1**4**	
19	**00020**	Clear For Adaptive	
20	**00021**	Manual Medium Flow	This address can only be written to 1. Read 1 is valid, 0 is invalid.
21	**00022**	Manual Flow(Only for material Calibration)	This address can only be written to 1. Read 1 is valid, 0 is invalid.
22	**00023**	Manual Discharge(Only for material Calibration)	This address can only be written to 1. Read 1 is valid, 0 is invalid.
…	**…**	Reserved	
80	**00081**	Clear Choose user ACUM	Write：**FF00H** = valid; Read **0000H.**
81	**00082**	Clear all users ACUM	
82	**00083**	Clear Choose Repice ACUM	
83	**00084**	Clear all Repice ACUM	

84	**00085**	Clear Total ACUM	
…	**…**	Reserved	
100	**00101**	Reset All	Write: **FF00H** = valid; Read **0000H.** Run time can write but not effective, need stop run then write valid
101	**00102**	Reset Calibration	
102	**00103**	Reset Sys&Com Paracontroller (not including communication paracontrollers)	
103	**00104**	Reset Recipe Paracontroller	
104	**00105**	Reset Peripherals Paracontroller	
105	**00106**	Reset I/O Module	
106	**00107**	Reset Motor Paracontroller	
107	**00108**	Reset User Logic Paracontroller	
108	**00109**	Execute Paracontroller Backup	
109	**00110**	Execute Recovery From Backup	
110	**00111**	Execute Delete Backup	Write: **FF00H** = delet back up paracontroller read：**0001H=**have back up paracontroller； **0000H**=no back up paracontroller。
111	**00112**	Communication paracontroller reset	Write：**FF00H** = valid； Read **0000H** Writable at run time but not effective, need to stop running to write effective。
Coil ON/OFF test (reserved 200~250)			
150	**00151**	IO test ON/OFF: Write：**FF00H** = valid；**0000H** = invalid Read：**0001H** = valid；**0000H** = invalid	
151	**00152**	Input port **1**	Write invalid Read： **0001H** = valid； **0000H**
152	**00153**	Input port **2**	

153	**00154**	Input port **3**	=invalid（When input port is valid，address read out **1**）
154	**00155**	Input port **4**	
155	**00156**	Input port **5**	
156	**00157**	Input port **6**	
157	**00158**	Input port **7**	
158	**00159**	Input port **8**	
159	**00160**	Input port **9**	
160	**00161**	Input port **10**	
161	**00162**	Input port **11**	
162	**00163**	Input port **12**	
163	**00164**	Output port **1**	Read：**FF00H** = valid；**0000H** = invalid （When write **FF00H**，corresponding port to the address shall be valid ） Read：**0001H** = valid；**0000H** = invalid
164	**00165**	Output port **2**	
165	**00166**	Output port **3**	
166	**00167**	Output port **4**	
167	**00168**	Output port **5**	
168	**00169**	Output port **6**	
169	**00170**	Output port **7**	
170	**00171**	Output port **8**	
171	**00172**	Output port **9**	
172	**00173**	Output port **10**	
173	**00174**	Output port **11**	
174	**00175**	Output port **12**	
175	**00176**	Output port **13**	
176	**00177**	Output port **14**	
177	**00178**	Output port **15**	
178	**00179**	Output port **16**	

Note 2: The controller will perform the weightless gain calibration according to the currently stored load cell power supply voltage, load cell sensitivity, and load cell maximum range (where the maximum range input cannot be greater than the maximum range set in the controller calibration (modbus addresses 10104 and 40105).
Calibration principle:

Zero calibration: Zero calibration can be performed via modbus (40106 and 40107) addresses. (If you skip the zero calibration and directly perform the weightless gain calibration, the last recorded zero will be used as the current zero calibration)

Gain calibration: Gain millivolts is the input load cell power multiplied by the load cell sensitivity, and the gain weight is the load cell's maximum range. The gain millivolts and gain weight used for gain scaling here are referenced below.

The first type of weightless gain calibration method: when the load cell power supply (5000mv) is input separately, the weightless calibration operation will be directly performed.

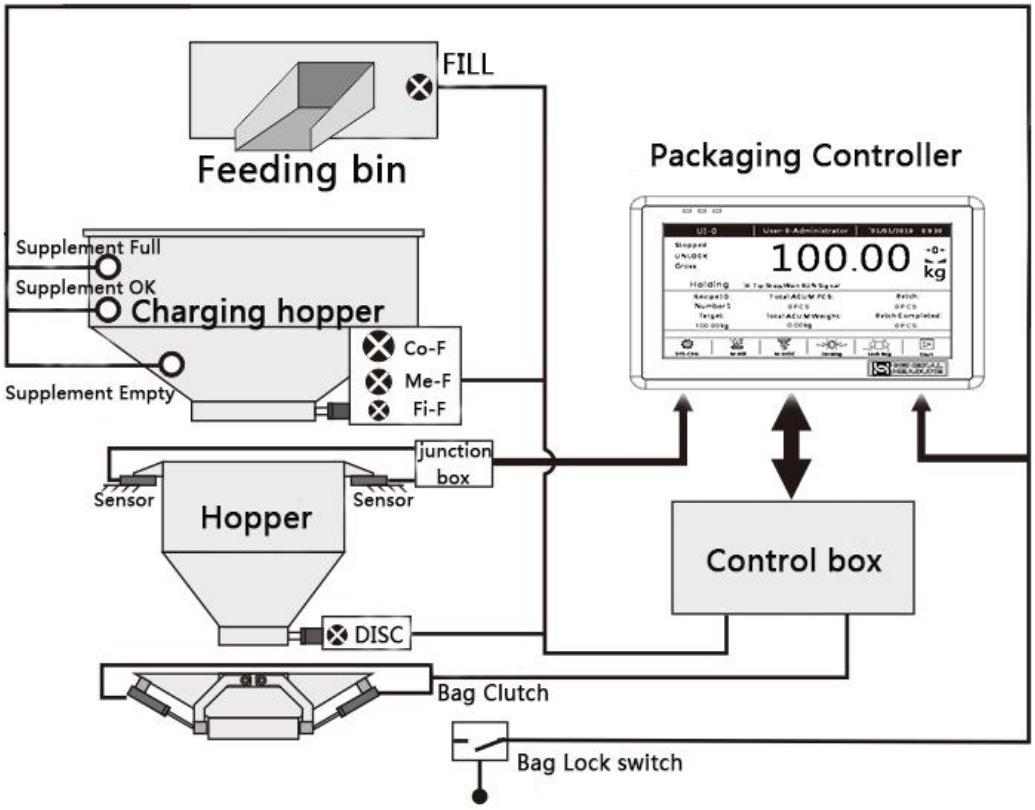
The second type of weightless gain calibration method: input load cell sensitivity (2mv/v) and input the load cell's maximum range (1000kg) will carry out the weightless calibration operation (note here, please input only the load cell sensitivity or only input the maximum When the range is measured, the entered value is not saved immediately. Only when both values are entered and the two values entered are reasonable, the data is saved and then the gain calibration is performed.

7. Automatic bagging process

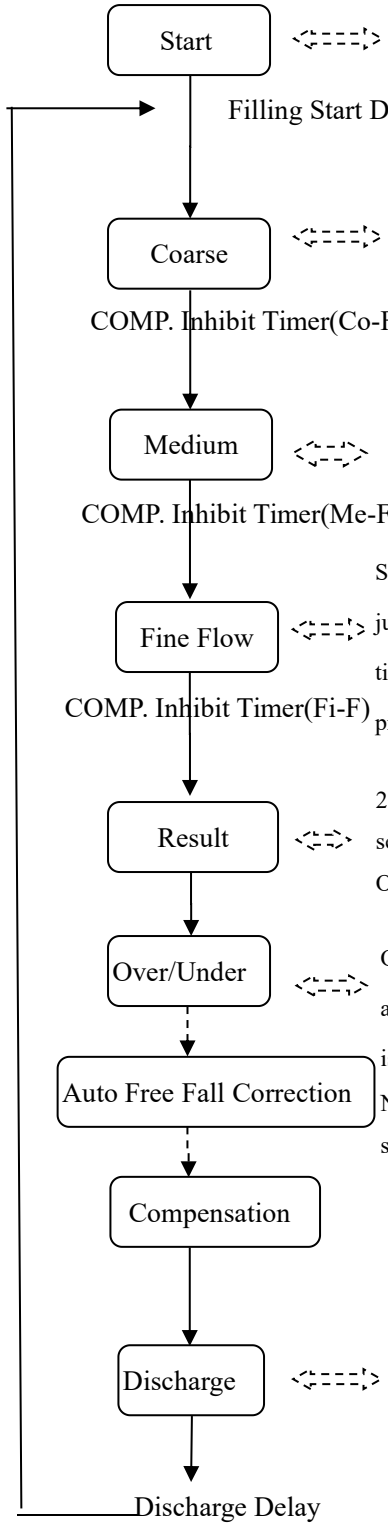
The GMC-P7 bagging controller automatically controls the entire bagging process of coarse, medium and fine filling and unloading in the automatic bagging state. Supports a variety of modes including bucket, bucketless scale, ton pack scale, valve port scale and **PLC**. The scale structure and working mode are selected in the system and communication paracontrollers.

7.1 With a single scale hopper

In this mode, the material is fed from the preparation hopper to the measuring hopper through the filling mechanism (coarse, medium and fine), and the weight sampling of the controllering control process is completed in the measuring hopper (the weighing load cell is mounted on the measuring hopper). After the controllering is completed, the material is discharged into the package through the unloading mechanism on the measuring hopper. Its structure is shown in the following figure:



Basic process description：



Effective start signal input, delay before controller start filling.After the delay to start coarse filling

Start Coarse Flow, to prevent over hit,"COMP. Inhibit Timer (Co-F)"doesn't judge weight. After the time finished, the controller monitors weight in real time. The weight of the material≥target value －coarse flow value，starts Medium Flow

Start Medium Flow，to prevent over hit，"COMP Inhibit Timer(Me-F)" doesn't judge weight. After the time finished, the controller monitors weight in real time. The weight of the material≥target value－medium flow value，starts fine flow process.

Start Fine Flow，to prevent over hit，"COMP Inhibit Timer(Fi-F)"doesn't judge weight. After the time finished, the controller monitors weight in real time. The weight of the material≥target value- Free Fall value， starts result process.

2 methods：Stable and Delay（recipt and paracontroller），according to the selected way to go through the correction process and then into the Over/Under correction process

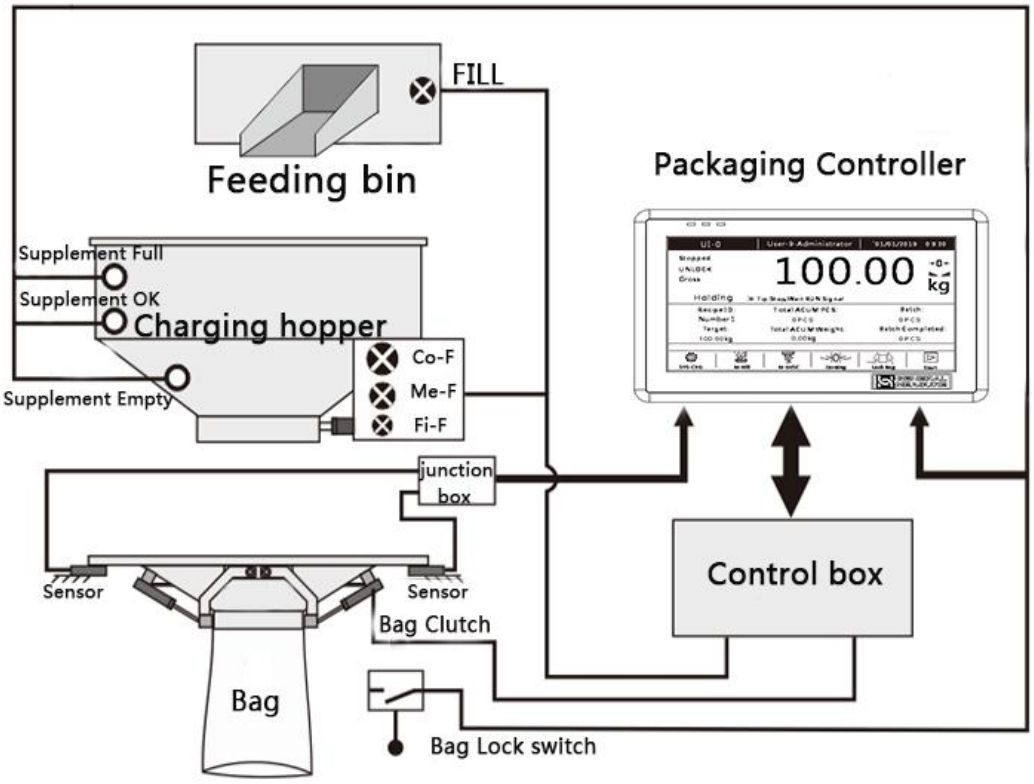
Over/under judgment, Auto Free Fall Correction and Compensation function are packing secondary function，if Recipe Paracontroller in function ON/OFF is OFF, discharge directly

Note：Over/under judgment is OFF, Compensation ON/OFF is ON, do not starts flow.

Bag lock action has been completed before bucket scale starts discharge.After discharge, when the weight is less than zero zone value, controller starts discharge delay, and the delay ends and enters the next packaging process, and the delay starts before filling

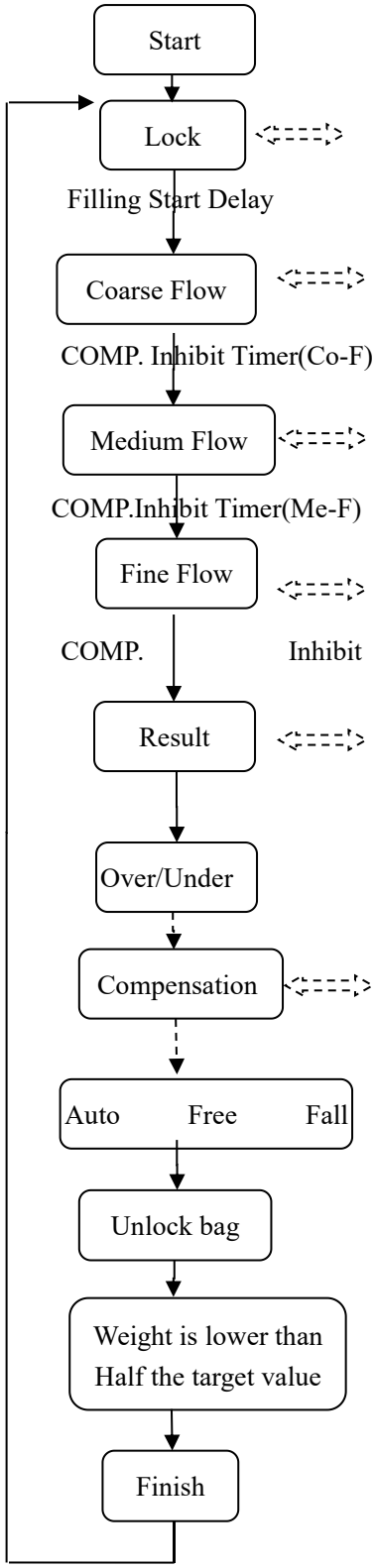
7.2 Without a single scale hopper

In this mode, the material is directly fed into the package from the hopper through the filling mechanism (coarse, medium, and fine), and the weight sampling of the controllering control process is completed in the package (the weighing load cell is mounted on the hopper). After the controllering is completed, the controller controls the unlock bag directly. Its structure is shown in the following figure:



The difference between the no hopper packing process and the hopper packing process is that the load cell is installed on the hopper. After starting, it is necessary to complete the bag clamping action before starting the filling delay and starting the filling process.

Basic process description：



Start signal input is valid， controller starts Filling Start Delay.When time up, starts coarse fiiling.

Start Coarse Flow, to prevent over hit,"COMP. Inhibit Timer (Co-F)"doesn't judge weight. After the time finished, the controller monitors weight in real time. The weight of the material≥target value－coarse flow value，starts Medium Flow

Start Medium Flow，to prevent over hit，"COMP Inhibit Timer(Me-F)" Doesn't judge weight. After the time finished, the controller monitors weight in real time. The weight of the material≥target value－medium flow value，starts fine flow process.

Start Fine Flow，to prevent over hit，"COMP Inhibit Timer(Fi-F)"doesn't judge weight. After the time finished, the controller monitors weight in real time. The weight of the material≥target value- Free Fall value，starts result process.

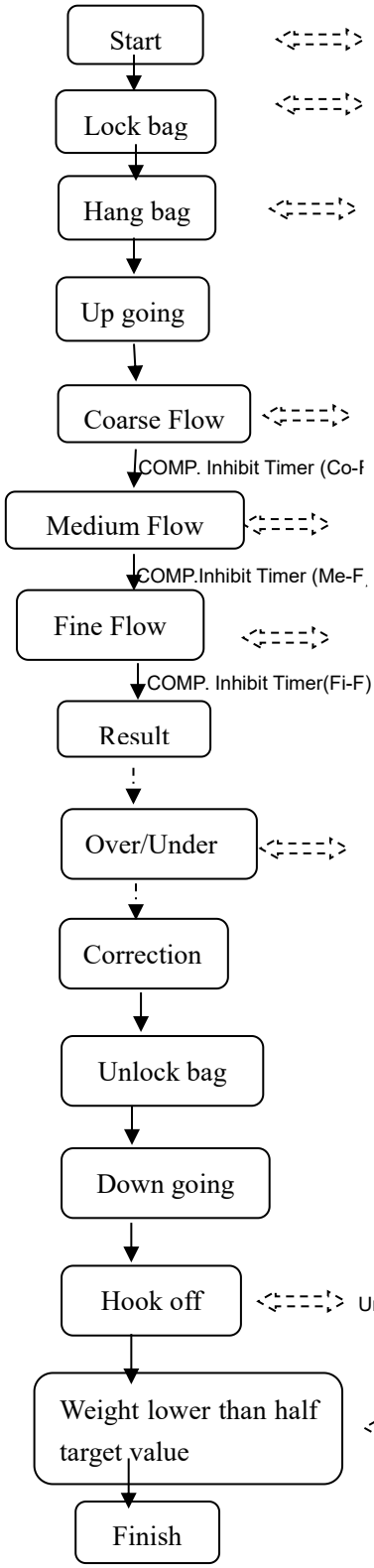
2 methods：Stable and Delay（recipt and paracontroller），according to the selected way to go through the correction process and then into the Over/Under correction process

Over/under judgment, Auto Free Fall Correction and Compensation function are packing secondary function， if Recipe Paracontroller in function ON/OFF is OFF, discharge directly

Note：Over/under judgment is OFF, Compensation ON/OFF is ON, do not starts flow.

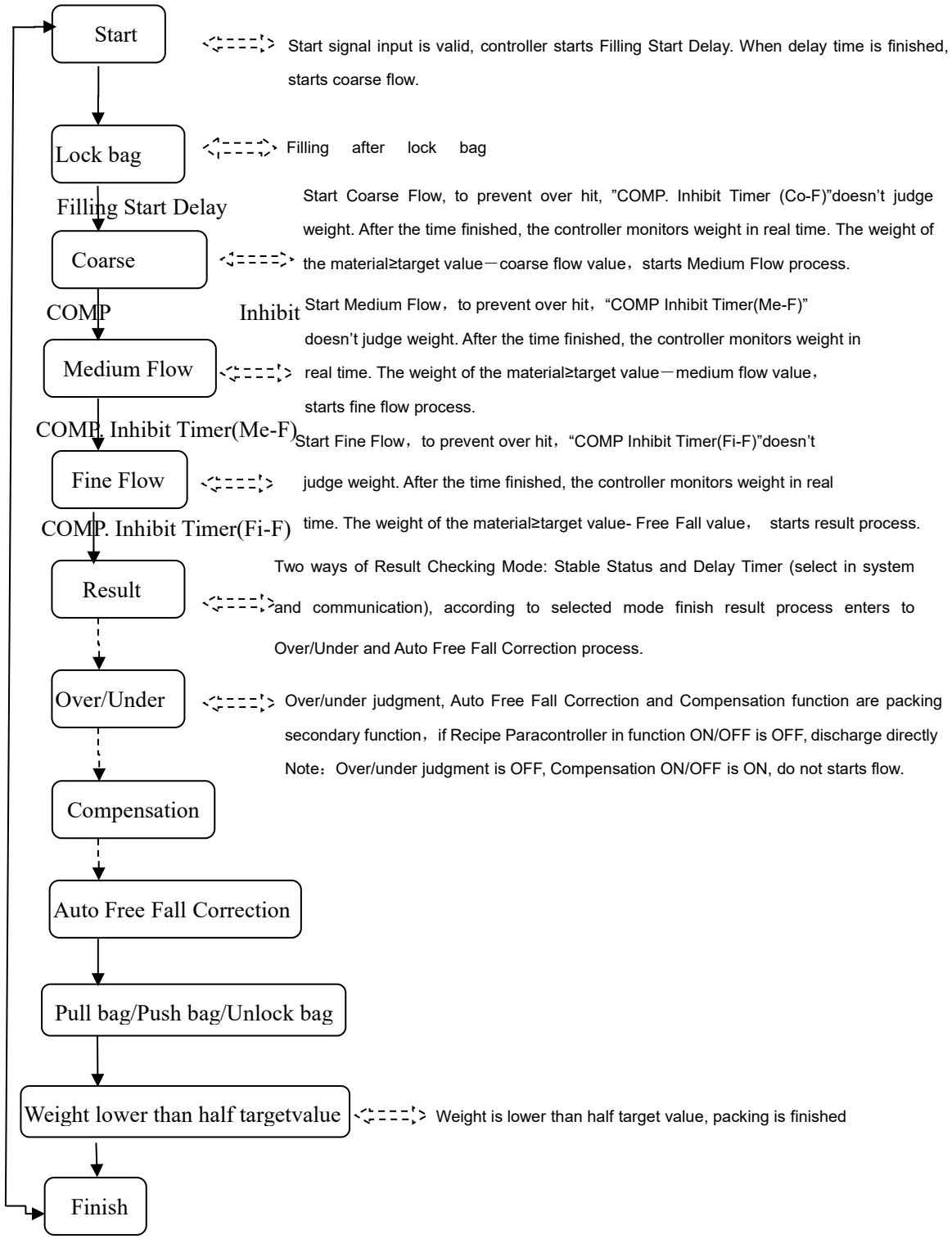
7.3 Tons of package scale

Process description：



7.4 Valve port scale

Process description:



7.5 PLC mode

In the PLC mode, the status displayed on the main page of the controller is changed to: coarse add, medium add, fine add, over tolerance, undershoot, upper limit, lower limit, zero zone.

When the weighing process starts, the quick addition, medium addition, and fine addition output are effective, and the main interface displays the coarse addition, medium addition, and fine addition in sequence.

When the weighing value > target value + excess value, the out-of-tolerance output is valid.

The under output is valid when the weighing value < target value - underbalance value.

When the weighing value > upper limit value, the upper limit output is valid.

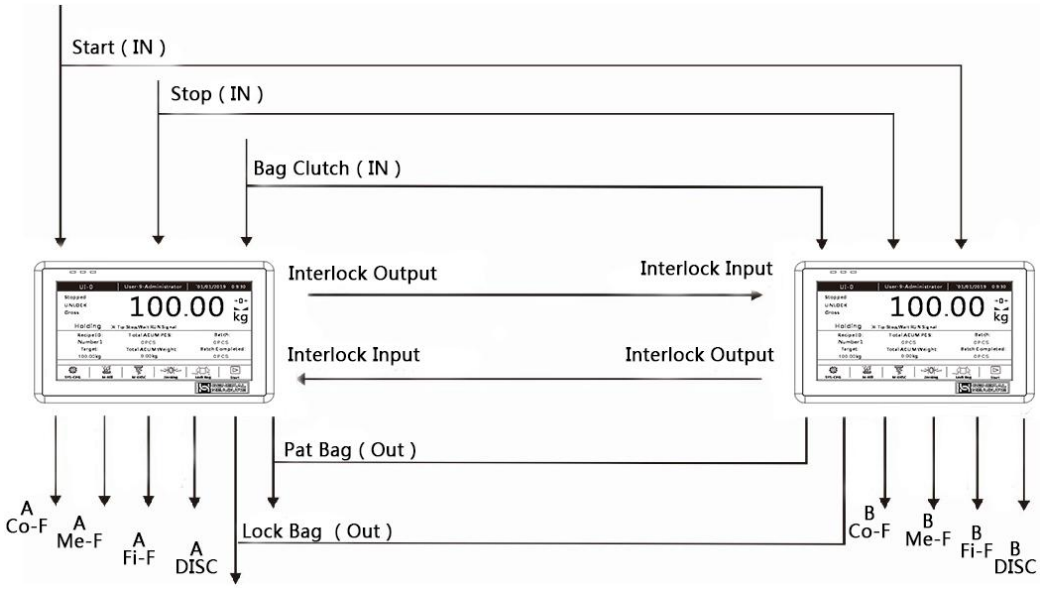
When the weighing value < lower limit, the lower limit output is valid.

When the weighing value < zero zone value, the zero zone output is valid.

7.6 Double scale interlocking bagging mode

The two controllers can be combined into two pairs of buckets and double bucketless scales by setting and wiring. The two measuring buckets can be weighed at the same time and connected to the same pocket mechanism. The two scales can be fed at the same time to improve the bagging speed. Setting 2 aspects, the working mode of the controller system and the communication paracontroller scale body structure are two controllers: interlocking **A** scale and interlocking **B** scale. **Note: The pockets are delayed by two controllers to be set the same**. Its structure is shown in the following figure:

Refer to the following figure for ON/OFFing wiring:



If the scale body mode selects the double bucket scale interlock mode, the target values of the **A** scale and the **B** scale should be set separately , the quick addition, the medium

addition value, and the drop value, and the materials are separately measured from the storage hopper through the two filling mechanisms. Filling in the bucket (coarse, medium and fine filling), under the operating state, it can independently control the filling speed of **A** scale and **B** scale, the whole bagging process of unloading and automatic unlock bag. **The A** and **B** scales are first quantitatively completed before the unloading process.

- Lock bag

With hopper: A scale or **B** scale, first judge the pocket signal before unloading, start the pocket delay when the pocket signal is valid, the mechanism clamps the bag after the delay is over , and then starts the unloading action, who is **A** and **B** scale First, quantify who will discharge first. If one is discharging scale, the other scale even quantitatively complete, also need to wait for the next bag-scale signal is valid before unloading.

Without hopper: judge the pocket signal before filling. When the pocket signal is valid, both scalesstart the pocket delay. After the delay, the mechanism clamps the bag. After the bag is completed, the delay before filling is started to avoid leakage of materials. After the delay time of the bag is reached, the controller judges the stability, peels after stabilization, and the weight of the bag is used as the tare weight. Then the controller changes from the gross weight state to the net weight state and starts the filling process.

- Unlock bag

With hopper: the controller judges whether the material in the **A** scale or the **B** scale hopper is lower than the near zero value. If it is lower, the timer discharge delay is started. After the delay time is reached, the controller closes the unloading and starts the unlock bag delay. The unlock bag is automatically released after the delay of the unlock bag.

Without hopper: Start the unlock bag start delay after the setting, and automatically release the bag after the delay. (If there is a bag patting function, start the unlock bag start delay after the bag is finished). The controller controls the conveyor signal output and starts the conveyor.

8. Motor working process

8.1 Motor filling section

8.1.1 Stepper motor filling

Stepper motor mode control fill door ON/OFF: The ON/OFF quantity involved is: **(fill pulse output) / (fill direction signal), (fill gate closes in place), (signal in-position signal type determines)**.

Take the process of coarse filling and fine adding as an example:

- Coarse addition process: controller control **(motor rotation direction signal)** output, to ensure that the motor rotation direction is the door opening direction, then **(fill pulse output)** according to the set **filling motor frequency** to output pulses, control the filling stepper motor to turn in the door opening direction, **(When the** number of **filling pulse output** reaches the set value, the output pulse signal is stopped, and the filling door stops rotating. At this time, it is in the coarse-adding state. Then the controller changes **(motor rotation direction signal)** output to the door closing direction.
- In the process of adding: **(fill pulse output)** according to the set **filling motor frequency** to output pulses, control the filling stepper motor to turn in the closing direction, **(the filling pulse output)** reaches the set value and stops outputting the pulse signal, the filling gate Stop turning, this time is in the middle state.
- Fine addition process: **(fill pulse output)** according to the set **fill motor frequency** to output pulses, control filling stepper motor continues to turn in the closing direction, **(fill pulse output)** number reaches the set value and then stop output pulse signal, filling door stops rotating, in this case the fine fill state.
- Filling off: **(filling pulse output)** According to the set **filling motor frequency** , the pulse is output, and the filling stepping motor continues to rotate in the closing direction until the detection **(filling door closes in place). The** input pulse is stopped after the input is valid, and the filling gate stops. Rotate, at this point the fill is completely closed.
- Note: If the closing process time exceeds the **filling door closing timeout time** set by the filling closing timeout time, the controller has not detected **(the filling door is closed in place)**, then the controller will stop **(fill pulse output)** , and the alarm **filling will close the timeout** .

8.1.2 Ordinary motor filling

Ordinary motor mode control fill door ON/OFF: The I/O Module involved is: **(adding material to open the door) / (adding material to close the door), (the filling door is closed in place).**

Take the process of coarse filling and fine adding as an example:

Take the process of coarse filling and fine adding as an example:

Coarse filling process: The filling process starts after the delay time. The controller first makes the (filling and opening) signal output valid, the effective time is the coarse opening time , and the coarse filling process begins.

- In the process of medium filling: When the weight of the material in the hopper ⩾ the single scale target value - coarse increase the advance amount, the signal output (filling closes) is valid, and the effective time is "coarse opening time - medium opening time".
- Fine filling process: When the material weight in the hopper ⩾ single scale target value - medium advance amount, the (filling closes) signal output is valid, the effective time is "medium plus door opening time - fine plus door opening time"
- Filling off: When the material weight in the hopper ≥ single scale target value - fine plus advance, the **(fill closing)** signal output is valid until the **fill door in-position signal is detected (the fill door is closed)** .

8.2 Motor lock bag part

8.2.1 Step motor lock unlock bag

Stepper motor mode control lock unlock bag: The ON/OFF quantity involved is: **(lock bag pulse output) / (lock bag direction signal) / (unlock bag in place),** (**signal is determined by the type of in-position signal**).

Take the process of clamping the unlock bag in the measuring bucket mode as an example:

- Lock bag process: the controller control **(lock bag direction signal)** output, to ensure that the motor rotation direction is the bag direction, and then **(lock bag pulse output)** according to the set **bag motor frequency** to output pulses, control lock unlock bag stepping The motor rotates in the direction of the **pocket, and the** number of **pulses required** to set the **pocket is** stopped after the **number** of **pulses required** to set the **pocket is** stopped. At this time, the pocket mechanism is in the pocket state. Then the controller changes **(the signal of the pinch pocket direction) and the** output is in the direction of the unlock bag.
- Unlock bag process: **(pinch bag pulse output)** according to the set **unlock bag motor frequency**to output pulses, control the unlock bag stepper motor to the direction of the unlock bag, until the detection **(unlock bag in place)** input is valid, stop output pulse signal In this case the bag is unlock state. Note: If the unlock bag process time exceeds the set **unlock bag process timeout period**, the controller has not detected **(the unlock bag is in place)**, then the controller will stop output **(lock bag pulse output)**, and the alarm will **call the unlock bag timeout.**

8.2.2 Motor double limit lock unlock bag

Ordinary motor double limit control lock unlock bag: The ON/OFF quantity involved is: **(lock bag) / (unlock bag), (lock bag in place) / (unlock bag in place)**. **(The signal is determined by the type of signal in place)**.

Take the process of adding a unlock bag in the measuring bucket mode as an example:

- Process lock bags: a signal controller output control lock folder bag to bag-bulk bags motor rotational direction, until a bag-detected signal and outputs the stop bit input signal is active folder bag, the bag clamp mechanism is in this case the bag sandwiched state. Note: If the bagging process time exceeds the set **bagging process timeout period**, the controller has not detected the bag in place signal, then the controller will stop outputting the bagging signal and the alarm **bagging process will time out**.
- Process unlock bags: unlock bags signal controller output control lock unlock bulk bags of rotation of the motor direction of the bag, the bag in place until detecting unlock bulk bags stops outputting the signal after the input signal is active, whereupon the bag-state mechanism is unlock bags. Note: If the unlock bag process time exceeds the set **unlock bag process timeout period** and the controller hasnot detected the unlock bag in-position signal, the controller will stop outputting the unlock bag signaland the alarm **unlock bag process will time out**.

8.2.3 Motor single limit lock unlock bag

Ordinary motor dual output control control lock unlock bag: the amount of ON/OFF involved is: **(lock bag) / (unlock bag), (lock bag in place).**

Take the process of adding a unlock bag in the measuring bucket mode as an example:

- The bagging process: the controller controls the ON/OFF output signal, and the output signal until the detection of the pocket in-position signal input is valid, the output signal output is invalid, and the device pocket is realized.
- The unlock bag process: the controller controls the ON/OFF output signal to realize the unlock bag of the device, and the output signal duration is the unlock bag output, and the output signal output is invalid.

8.3 Motor discharge part

8.3.1 Stepper motor discharge

Stepper motor control discharge: The ON/OFF quantity involved is: **(discharge pulse output), (discharge direction signal), (discharge opening door is in place).**

Take the unloading as an example:

Discharge opening process: controller control **(discharge direction signal)** output, to ensure that the motor rotation direction is the door opening direction, and then **(discharge pulse output)**according to the set **discharge door motor frequency** to output pulses, control the discharge stepper motor to the direction of rotation of the discharge door, stops

outputting a pulse signal**(output pulse discharge)** the value of the number reaches **the number of pulses required to** set **the discharge,** the discharge mechanism is in the open state at this time

- Discharge closing process: After the discharge door is opened, if the weight of the controllerdetection hopper is lower than the **near zero value**, the **discharge delay time** will be started. After the discharge delay time is over, the controller change **(discharge direction signal)** output is closed. Direction, **(discharge pulse output)** according to the set **discharge motor frequency** to output the pulse, control the discharge stepper motor to rotate in the closing direction, until the detection **(discharge door open in place)** input is valid, stop output pulse signal, this The time is closed. Note: If the door closing process time exceeds the set **discharge closing timeout time** , thecontroller has not detected the door closing in-position signal **(the discharge door is in place)** , then the controller will stop output **(discharge pulse output)** , and the alarm **unloading closes the door timeout** .

8.3.2 Motor single limit discharge

Ordinary motor forward and reverse single limit mode to control unloading: the ON/OFF quantity involved is: **(unloading to open the door), (unloading to close the door in place).**

Take the unloading process as an example:

- Discharge opening process: At the beginning of the unloading process, the controller output discharge signal controls the unloading motor to rotate in the direction of the discharge opening, and continuously **discharges the door opening output effective time** set discharge motor door opening signal output time, and then closes the unloading signal Output.
- Closing the discharge process: After the discharge door is opened, the controlleration near the hopper weight is less than zero, then the discharge start delay time, delay time after the discharge, the discharge door closing output signal, to control the discharge motor closing the discharge direction of rotation until the sensed discharge doors close off the discharge stops outputting the input signal is position signal active, whereupon the discharge door in a closed state. **Note**: If the discharge door closing process time exceeds the set **discharge closing timeout time**, the controller has not detected the discharge door closing in-position signal, then the controller will stop output and the alarm **discharge closes the timeout** .

8.3.3 Motor double limit discharge

Ordinary motor forward and reverse double limit mode control discharge: the ON/OFF quantity involved is: **(unloading) (unloading closes the door), (unloading closes the door) / (unloading opens the door in place).**

Take the unloading process as an example:

- Discharge opening process: At the beginning of the unloading process, the controller output discharge signal controls the unloading motor to rotate in the direction of the unloading door opening, until the discharge door in-position signal input is detected to stop outputting the discharge signal, and the discharge door is discharged. Is open. Note: If the discharge door opening process time exceeds the set **discharge opening timeout time**, the controller has not detected the discharge door open door in-position signal, then the controller will stop output, and the alarm**unloading will open the door timeout**.
- Discharge closing process: After the discharge door is opened, The controlleration near the hopper weight is less than zero, then the discharge start delay time, delay time after the discharge, the discharge output closing signals to control the discharge motor is rotated in the closing direction of the discharge until the sensed discharge Close door input valid signal in place to close the discharge stop signal is output, when the discharge doors in a closed state.Note: If the discharge door closing process time exceeds the set **discharge closing timeout time** , the controller has not detected the discharge door closing in-position signal, then the controller will stop output and the alarm **discharge closes the timeout** .

8.3.4 Motor one-way rotary discharge

Ordinary motor one-way rotation one-week single limit mode control discharge: the ON/OFF quantity involved is: **(unloading), (unloading closes the door in place)**.
Take the unloading process as an example:

- Discharge opening process: At the beginning of the unloading process, the controller output discharge signal controls the unloading motor to rotate in the direction of the discharge opening, and continuously sets the **discharge motor to open the door signal output time**, and then closes the discharge signal output.
- Discharging and closing process: After the unloading door is opened, if the controller detects that the weight in the hopper is lower than the near zero value, the discharge delay time isstarted. After the discharge delay time is over, the discharge signal is output, and the unloading motor continues to be controlled. closing the discharge direction of rotation until the sensed discharge doors closing the discharge stops outputting the input signal is position signal active,whereupon the discharge door in a closed state.
- **Note**: If the discharge door closing process time exceeds the **discharge closing timeout time**, the controller has not detected the discharge door closing in-position signal, then the controller will stop output and the alarm **discharge closes the timeout.**

8.3.5 Motor debug function

- Motor debug function is for the convenience of users quickly determine the door size of coarse, medium, fine flow. Take door size of debug fine flow for example as below.

Steps as below：

- 1：The left side of the interface is the current coarse, medium, fine pulse count. You can modify the data in fine flow pulse input box.
- 2：Click“Open fine flow”buttom，then controller ouput fine flow signal. User can determine whether the current pulse is appropriate by checking the opening size of the charging door. (Note: click "close fine flow" again to close fine flow.Controller can only be in a state, can not be in the state of coarse flow or medium flow at the same time),
- 3：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 , fine pulse number.

9. Peripheral workflow

9.1 Pat bag

The amount of ON/OFF involved in the bag making function is: "patting bag".
The bag-making function consists of three optional processes: “Bag in the filling”, “Bag after setting”, “and extra bag”.
(Note: The extra bag function is not available in PLC mode).
If you want to use the bag making function, first set the bag shooting function in the bag paracontrollers under the peripheral paracontrollers. Different scale body structures are different depending on the optional bag mode.

In the filling bag:
During the filling process, if the bag in the filling is set, when the current weight is greater than the starting weight of the bag, the bag in the filling starts, and the output of the bag effective time and the bag invalid time are regarded as one bag at a time. After the "number of shots in the filling" is reached, the output of the shot bag in the filling is stopped.

After the value is taken, the bag is:
After the fixed value is over, if the set value is set and the bag is taken, the bag will be taken directly after the fixed value is set, and the output of the "bag valid time" and the "bag invalid time" will be regarded as one shot at a time, after reaching the "set value". After the number of times the bag is taken, the bag output is stopped after the fixed value is stopped.

Extra patting bag:
After all the bags are output, an additional bag output is performed. The effective time is the effective time of the extra bag output, and the invalid time is the bag invalid time. End the extra shot output after the bag is taken once.

9.2 Coding

The amount of ON/OFFing involved in the coding function is: "code".
After the pocket is completed, if the code ON/OFF is turned on and the “code valid time” is not 0, the “code start delay” will be started. After the delay is over, the code delay will be started. The time is “coded effectively”. Time", after the time is up, the coding process ends.
(Note: If "Do not allow unloading ON/OFF when coding" is turned on, the loading and unloading function is prohibited during the code process)

9.3 Conveyor

The amount of ON/OFF involved in the conveyor function is: "conveyor output". After the fixed value is over, check whether the “conveyor ON/OFF” is turned on. When it is turned on, run the “conveyor start delay time”. After the delay time, the conveyor starts to run, and the “conveyor running time” is counted. Stop running.

Under the bucket scale structure, if the previous scale conveyor is still running, stop the conveyor before unloading.

Under the structure without bucket scale, if the conveyor of the previous scale is still running, stop the conveyor before the unlock bag.

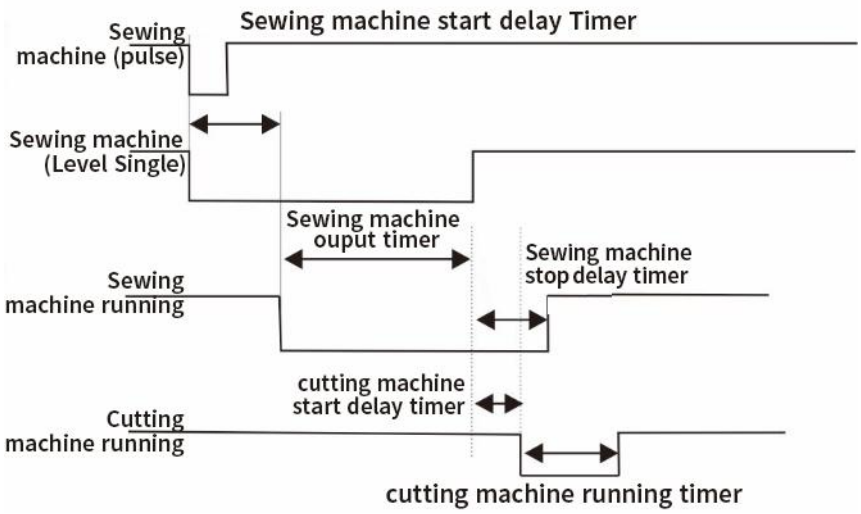
9.4 Printing

After connecting the printer, you need to set the communication paracontrollers of the controller and select the communication method as the printing method. The print format is available in 24 columns and 32 columns. The language is available in both English and Chinese, and the number of lines to be printed can be set.

9.5 Sewing machine

The number of ON/OFFes involved in the sewing machine function is: “sewing machine output”, “cutting machine output”, “sewing machine start”, “sewing machine emergency stop”.

When the sewing machine ON/OFF is effective, the sewing machine starts to delay. When the delay time reaches, the sewing machine starts to work.The continuous output time is the output time of the sewing machine. After the output time of the sewing machine arrives, the delay time before the sewing machine is started and the delay time of the cutting machine is started.Sewing machine continues to work output, the duration of the sewing machine shutdown delay time.Tangent machine start delay time, when the tangent machine start delay time arrives, the tangent machine begins to work, the working time is the output time of the tangent machine, the tangent machine stops working after the output time arrives.



9.6 Discharge Patting

Discharge Patting function involved I/O modules are：Output I/O module-“Discharge Patting”.

When discharging mode to open the closed after opening, if the current discharging time is longer than the set of discharge time effectively, began to discharge shaking output, according to an effective time and discharging shaking a discharge shaking invalid combination for a discharge time shaking, when discharging vibrating frequency reaches the set of discharge after the vibrating frequency, discharge end of the vibrating process and output alarm stop

9.7 Filling/Discharge Overtime Paracontroller

If“Filling/Discharge Overtime Paracontroller”turns on，in running state, in the process of coarse, medium and fine adding and discharging, if the current process delay is longer than the set timeout time of coarse, medium and fine adding and discharging, the output timeout alarm and stop.

9.8 Auxiliary Pulse

Auxiliary Pulse function involved I/O module are：“Auxiliary Pulse input **1**~**4**”、“Auxiliary Pulse output **1**~**4**”。

Take Auxiliary Pulse **1** for example：

Auxiliary mode：

In controller stopped or running state, when the I/O Module input "auxiliary pulse input 1" effectively, the switch output auxiliary pulse output "1" to start the output, continuous output Settings "auxiliary pulse duration 1", after time to stop output, waiting for the set of "auxiliary pulse 1 no time" to the later, once again began to output.Stop output

until the "total execution time of auxiliary pulse 1" reaches, and turn off the auxiliary pulse switch.

If the "total execution time of auxiliary pulse 1" is set to 0, the output process will continue in a loop.

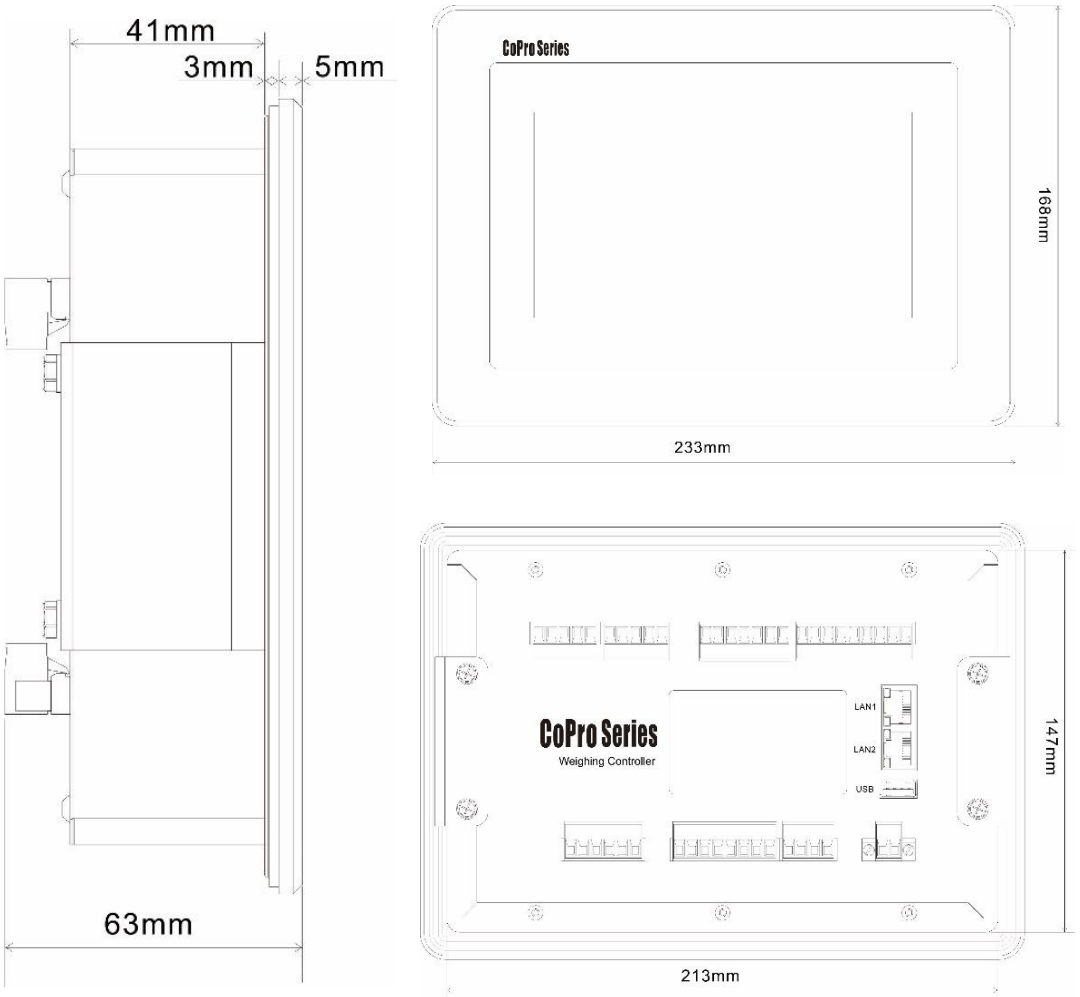
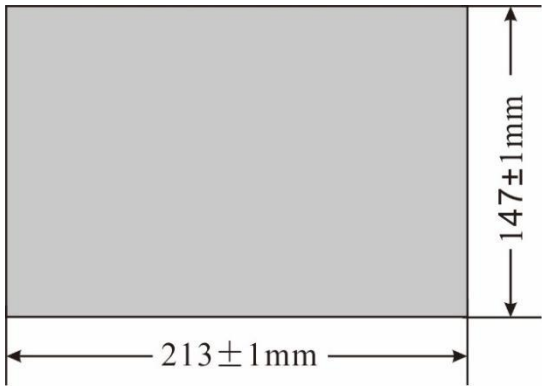
During the execution of the auxiliary pulse, if the switch input auxiliary pulse input 1 is valid, the output of the auxiliary pulse 1 will stop.

Level mode：

1. Set paracontrollers and I/O Module: Click the paracontroller of "auxiliary pulse mode" in "peripheral paracontrollers" - "auxiliary pulse", select the type of "level mode" for the corresponding pulse, set the "effective time of auxiliary pulse" of the corresponding pulse as 2 seconds, and set the "invalid time of auxiliary pulse" of the corresponding pulse as 2 seconds.Select the input port and output port of the auxiliary pulse in the "IO function definition" paracontroller.

2. Perform operation: select [Level Mode], continue to give high level at the input end set, and start the effective time of auxiliary pulse at the same time, and continue to be effective until the effective time of auxiliary pulse ends at 2s.At this point, the output of the trigger signal becomes invalid until the invalid time of the auxiliary pulse ends at 2s.When the invalid time of auxiliary pulse ends, the output end becomes effective again, and the effective time of auxiliary pulse is restarted, so as to cycle.Until the input terminal no longer input high level, the output signal port no longer output high and low level.

10. Dimension (mm)



Mounting hole size