GENERAL MEASURE

GM9907-L6(L6D)

User's manual

110608080002

V01.00.03

As our products have been continuously improved and updated, our company reserves the right to modify this manual at any time without prior notice. To do this, please visit the company website frequently to get timely information.

Company website www.gmweighing.com

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

Catalogue

1. Overview

GM9907-L6(L6D) filling controller is a new weighing control device specially developed for automatic resulting filling scales with dual scale increment method. The controller adopts a touch screen display interface, which is intuitive and easy to operate; A new algorithm makes weighing control faster and more accurate; The USB interface and dual serial ports make it easier for devices to connect to the system. Can be widely used in industries that require resulting packaging equipment such as feed, chemical, and grain.

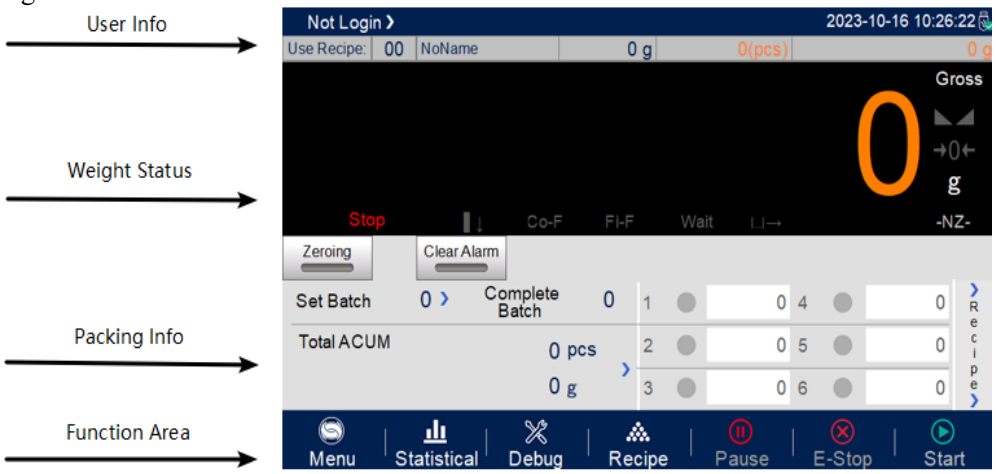
1.1 Function And Features

- Touch screen display interface, making operation more intuitive and convenient.
- Support single scale(GM9907-L6) and dual scales(GM9907-L6D)。
- **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 filling scale.
- Fully automatic double material speed.
- Can store 20 formulas for convenient filling of materials of different ranges
- USB port facilitates exporting historical record parameters
- Fill control function, convenient control connection between filling scale and front filling equipment
- Fill speed adaptive function
- IO User Logic programming
- Auto Free fall connection function
- Multiple digital filtering
- Batch setting function
- Automatic zero tracking
- Time/Date function
- Two-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

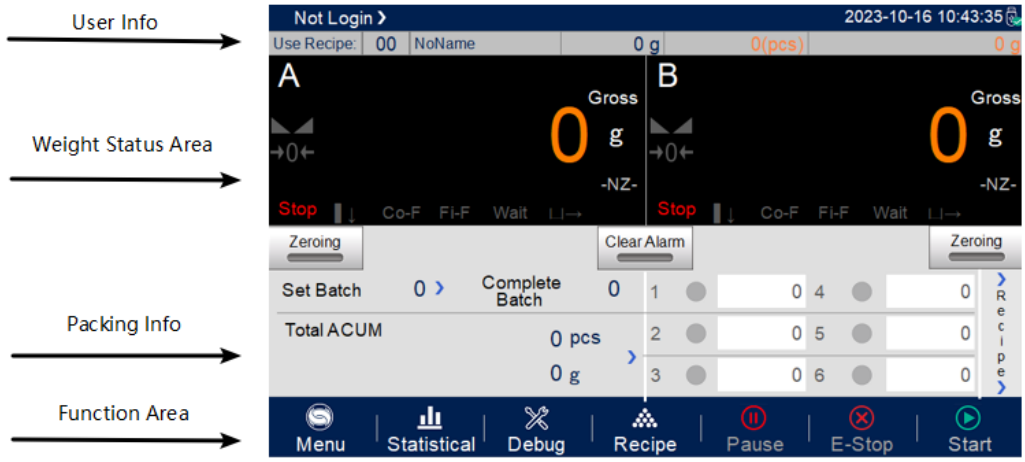
1.2 Front Panel Description

Interface 0 Introduction(Main Interface):

Single Scale：



Dual Scale：



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

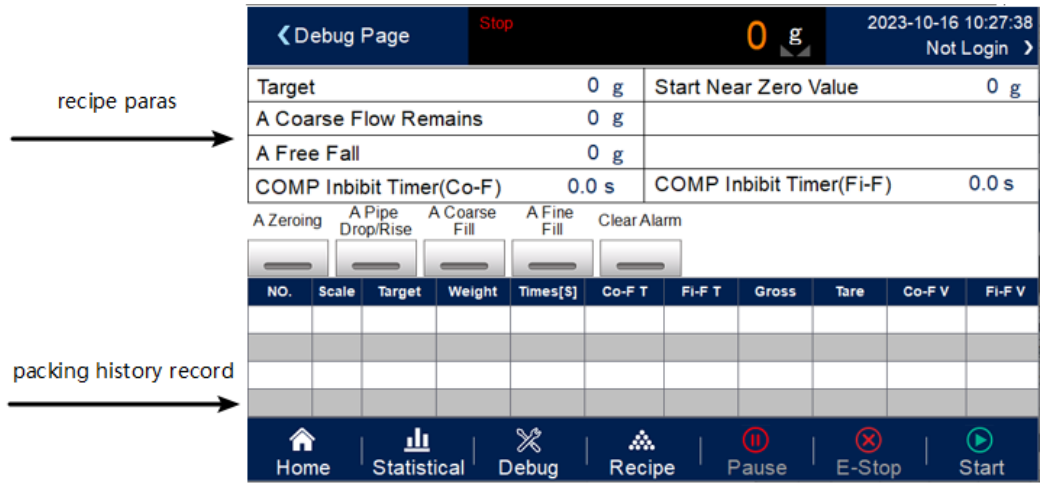
②Weight Status Area：Including weight value display, weight unit display, 8 flag bit display and I/O Module short cut key.

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

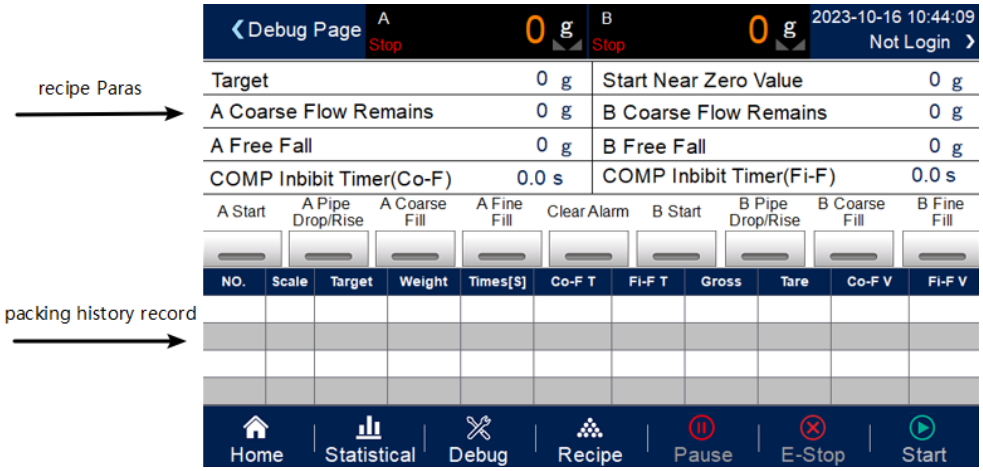
④Function area：Controller menu paracontrollers query Settings and the corresponding operation keys

Interface 1 Introduction(Debugging Interface):

Single Scale：



Dual Scale：



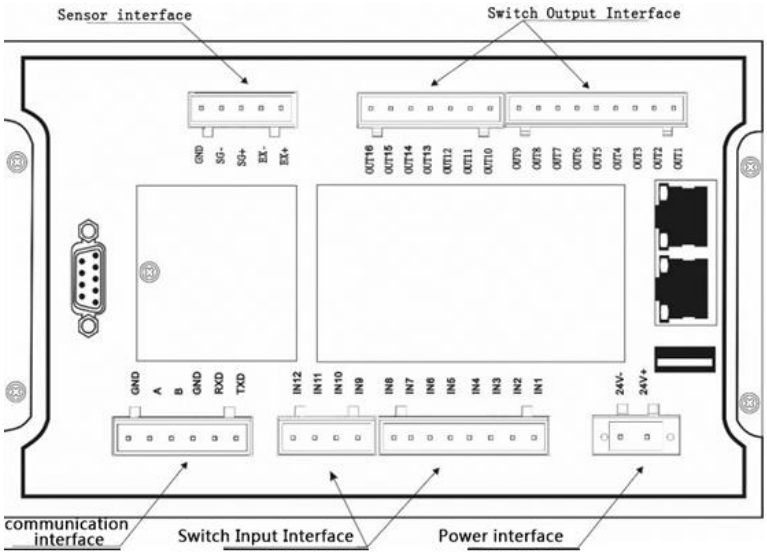
①recipe para：can quickly set recipe para，debug controller easily。

②Packing history record：can view current packing history data derectly, easy to compare.

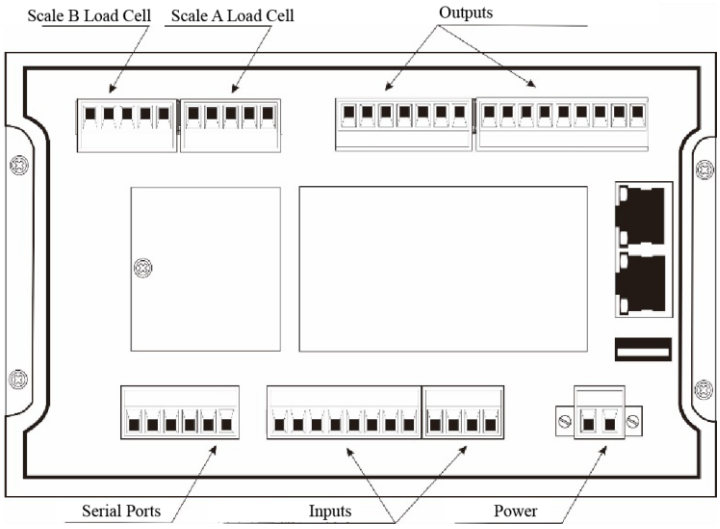
Indicater light description:

Left 1: Power light;
Left 2: Serial port 1-RS232 Communication indicater light, it blinks during communication.
Left 3: Serial port 2-RS232 Communication indicater light, it blinks during communication.

1.3 Rear Panel Description



Dual Scale：



1.4 Technical Specifications

1.4.1 General Specifications

Power Supply: DC24V.
Power Filter: included.
Working temperature: -10～40℃
Maximum humidity: 90%R.H non-condensing.
Power consumption: about 15W.
Dimensions: 190mm ×124mm ×48mm.

1.4.2 Analog Part

Load cell power supply: DC5V 125mA（MAX）
Input impedance: 10MΩ
Zero adjustment range: 0.002～15mV（when load cell is 3mV/V）
Input Sensitivity: 0.02uV/d
Input Range: 0.02～15mV
Conversion: Sigma- Delta
A/D Conversion speed: 120、240、480、960 times/sec
Non-linear: 0.01% F.S
Gain drift: 10PPM/℃
The Maximum display accuracy: 1/100000

1.4.3 Digital 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

2.1 General principles

1）Make appropriate installation holes on the control box, (Size: 179（±1）mm ×113（±1）mm）

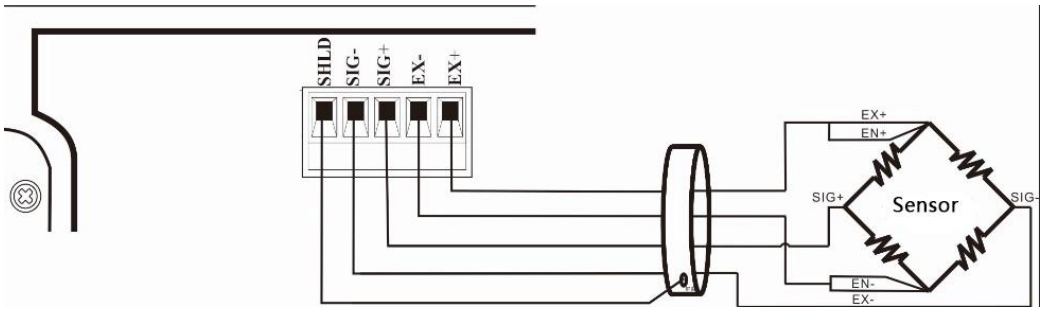
2）Install GM9907-L6 into a control box.

3）remove the side strips on both sides of GM9907-L6， fixed on both sides of the device and secured with M3 * 10 screws.

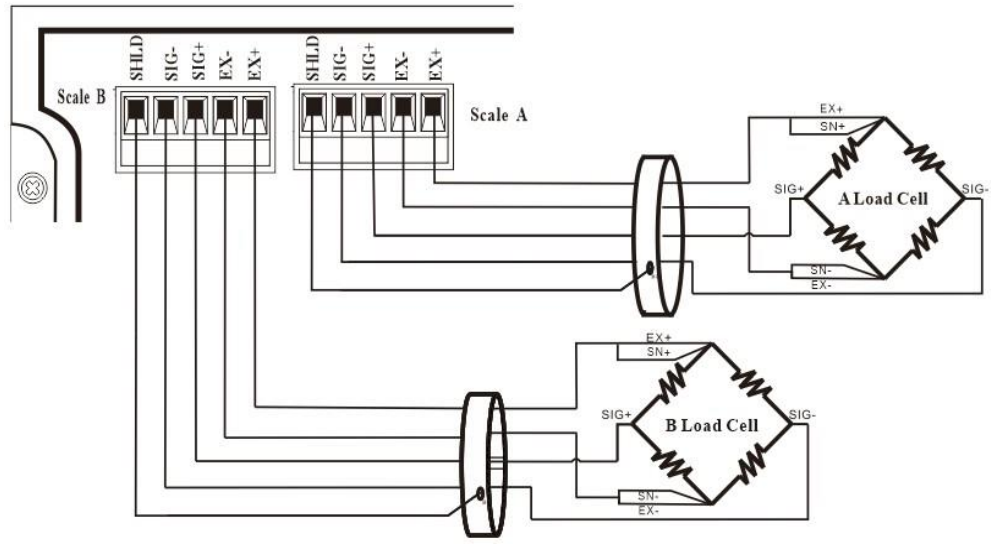
2.2 Load Cell Connection

GM9907-L6(L6D) filling 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 SN- with EX-.

Single Scale：



Dual Scale：

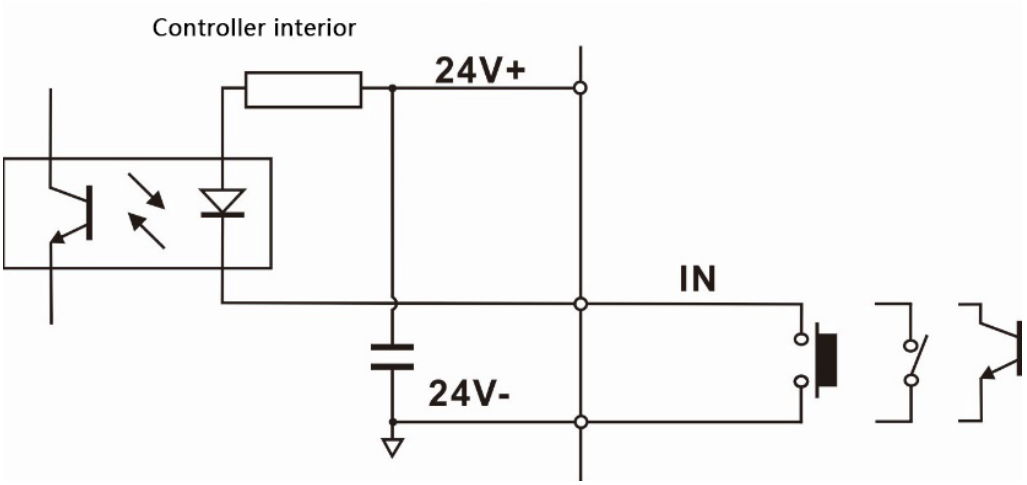


EX+: Excitation+ EX- : Excitation- **SN+** : Sense+ **SN-** : Sense- **SIG+** : Signal+ **SIG-** : Signal-

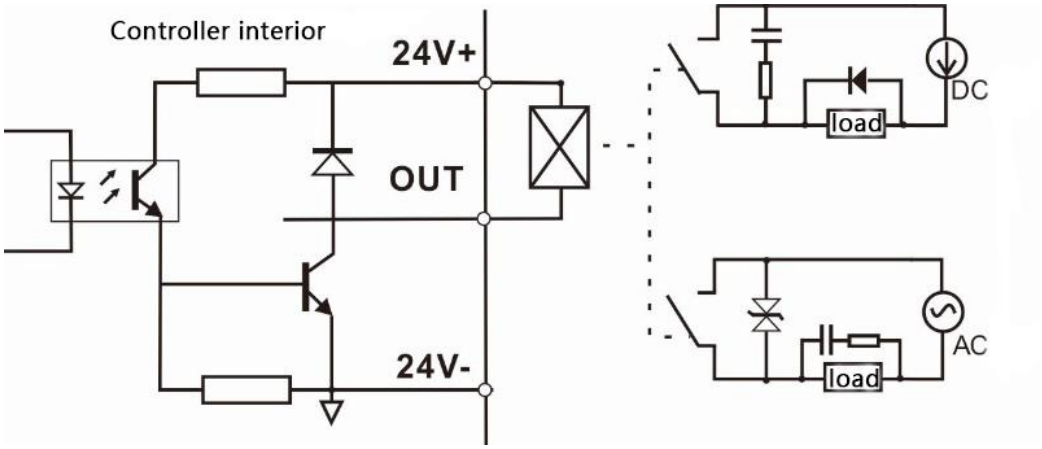
2.3 I/O Module Port Connection

GM9907-L6(L6D)filling controller contains 28 lines I/O(12 input/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

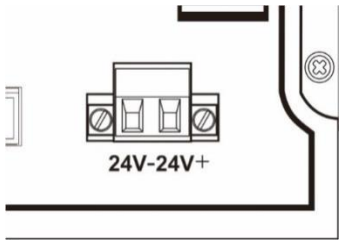


I/O Module Output port diagram

GM9907-L6(L6D) filling controller, the I/O module can be customized by users to facilitate wiring and some special application.

2.4 Power Supply Connection

GM9907-L6(L6D) filling controller use 24V power supply. The connection is as shown below.



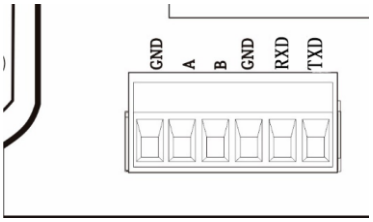
Power terminal diagram:

24V+ connect **DC+**，**24V-** connect **DC-**.

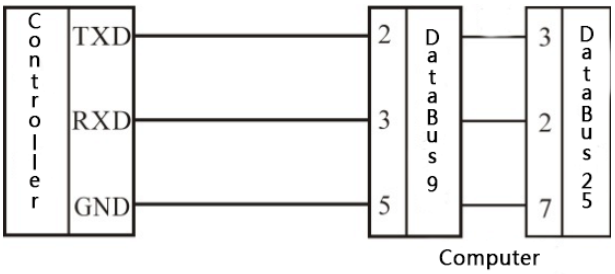
Note： this product use 24V DC power supply, use220V AC power supply will permanently damage the controller and cause danger！！

2.5Serial port connection

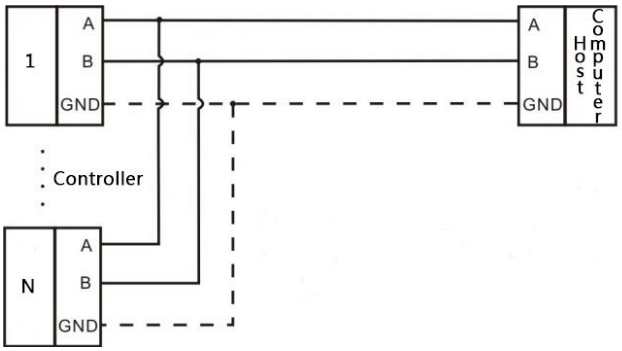
GM9907-L6(L6D) filling controller provide two serial ports. As shown in the figure below. One is RS-232 mode(terminal port TXD，RXD, GND)，the other is RS-485（terminal port A，B，GND），Serial port support: Modbus protocol, continuous mode and print format.



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 methord:

GM9907-L6(L6D) 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, calibration completed, 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 and enter the start-up interface.

3. User Permission Introduction

In order to prevent the exceptions of the controller caused by the misoperation of users. **GM9907-L6(L6D)** filling controller provide several levels of permissions to choose: where the reserved user not open to customer, and other permissions showns as below.

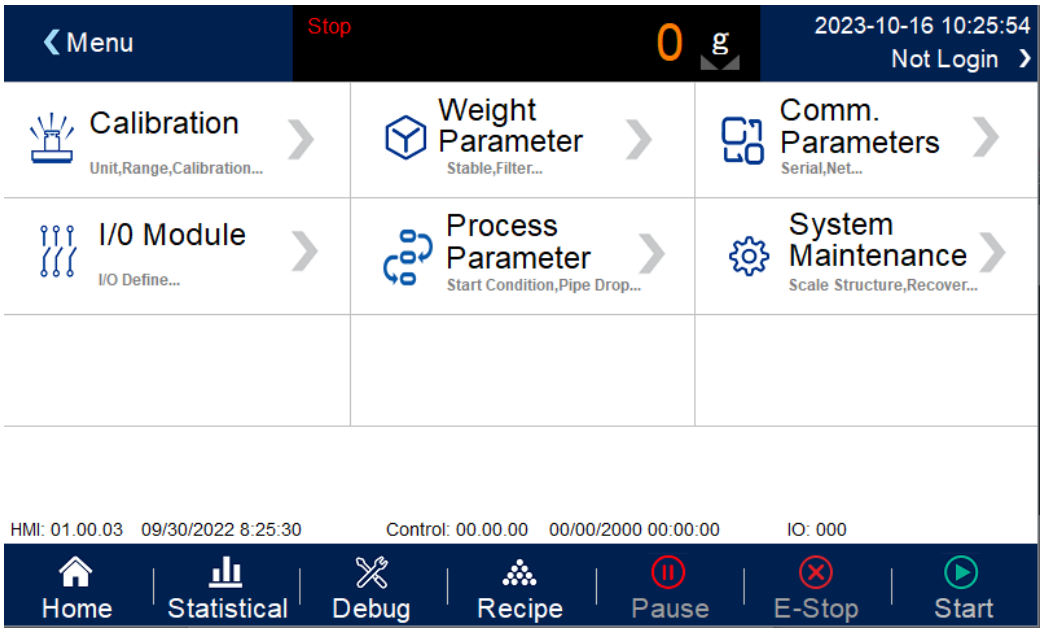
User Name	Default Password	Pemission
Engineer	000	Can set all parameters.
Admin	0	Can set recipe and process parameters,but can't calibrate、operate I/O modbules and system maintenance.
Operator01	1	Can enter interface by shortcut keys, only allow to modify recipe parameters. Can modify the direct defined parameters by shortcut keys.
Operator02	2	
Operator03	3	

Peimission introduction：

- Controller use operator identity to log in defaultly.
- Switch Permission， could click the para item that need permission, input the corresponding password of administer or reserved user in the pop-up box to log in successfully.
- Click【User Manage】in【System Maintenance】， could modify the password of current user in pop-up box.

4. Menu

Click Menu，can refer and modify paracontroller..



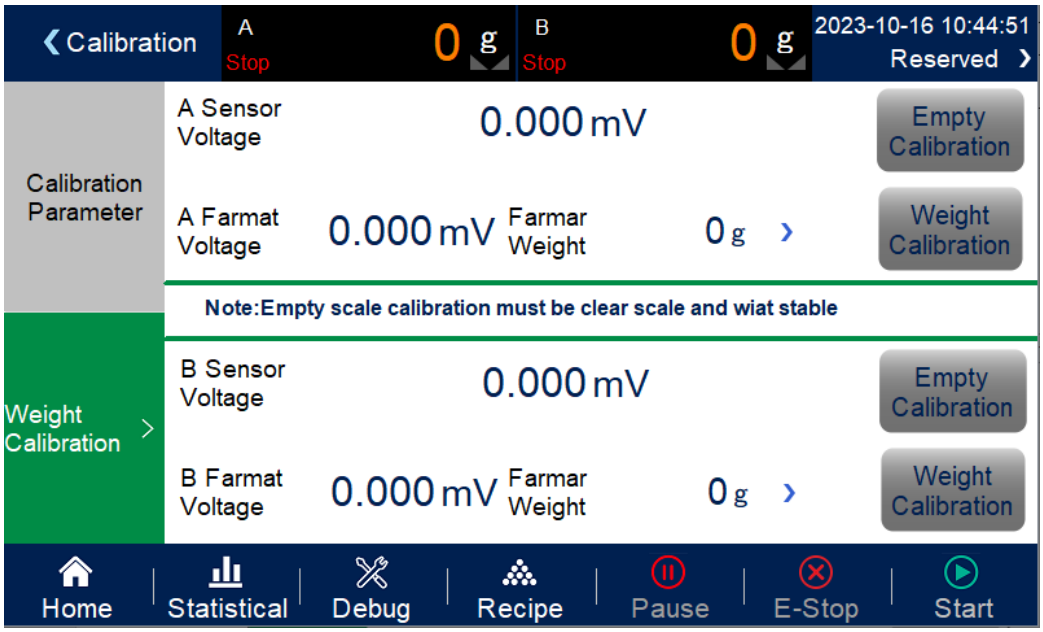
- Click parameter，entert current parameter to check、set parameter.
- Clice the left-top button to exit the current interface and return to the previous interface.

Menu	Parameter List	Parameter introduction
Calibration	Calibration Parameter	Set weight parameters such as units and decimal points.
	Weight Calibration	Perform the calibration operation by using weights
Weighing Parameter	Zero Range/Filter Level and so on	Set weighing related parameters, such as zero range/Stable Range these parameters.
Comm. Parameters	COM/Ethernet/Printing	Set the communication parameters like serial port\ethernet\print.
I/O module	Input Define	Define the value of the input port of controller.
	Output Define	Define the value of the output port of controller.
Process parameters	Starting conditions for feeding	Set the starting conditions related to feeding.
	Pipe Drop Process	This parameter is valid when the Pipe Drop function is not turned off
	Filling process	The relavant time item of filling.
	Result checking	Waiting and stablility judging. Over/under weight、methord、replenishment、Free Fall correction.
	Bucket Move process	Transfer bucket weight、the related time parameters.
System Maintenance	Scale Structure	Set relevant properties such as scale structure and working mode

	Logic Programmer	Auxiliary Logic program paras introduction；six group output logic parameters can be set
	Recovery Factory	Set various parameters to restore factory and backup
	Software Upgrading	Upgrade the software version
	Language and Time	Set the language and time
	User Management	Use to modify the password
	HMI Config	Set the time of buzzer、Screen extinction、and Screen protection

4.1Calibration

When the GM9907-L6 (L6D) filling controller or any part of the weighing system is changed for the first time, and the current device calibration parameters cannot meet the user's requirements, the controller should be calibrated. The calibration parameters directly affect the weighing results of the controller. To prevent personnel from misoperating, it is required to retain the user's identity before logging in to calibrate the controller (by clicking on the parameter that requires permission and entering the corresponding password of the reserved user, you can log in to the corresponding user).

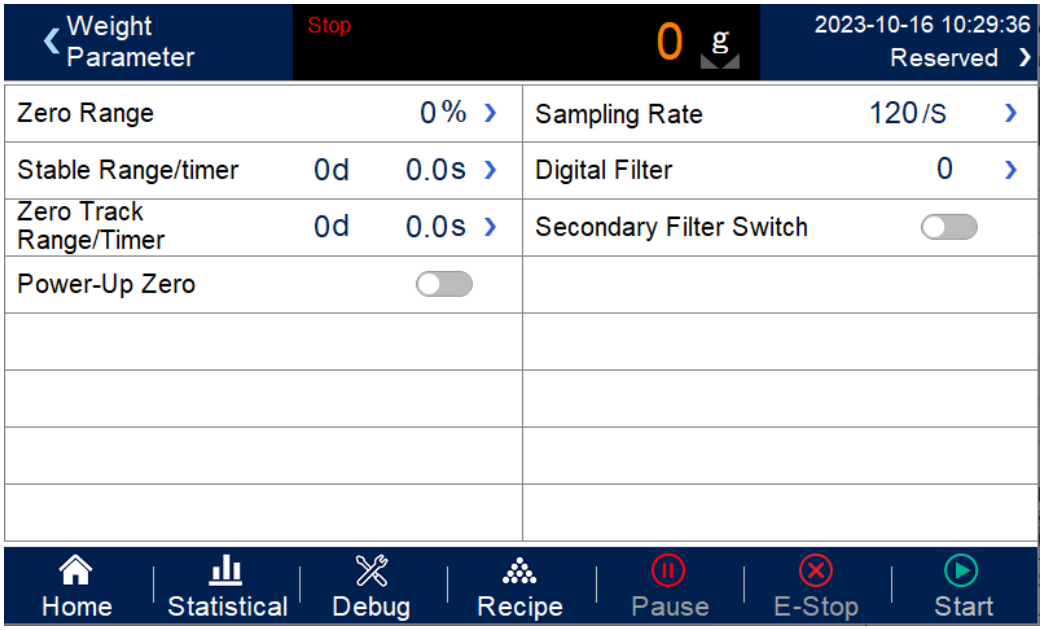


Calibration Parameter	Calibration Subitem	Description
Weighing Parameter	**1**.Unit	Init value：**kg**；**g/kg/t/lb four options.**
	2.Decimal Point	Init value：**0.00**；**0~0.0000 five options**。
	3.Division	Init value：**1**；**1/2/5/10/20/50 six options**。
	4.Full scale	Init value：**100.00**；range less than or equal to Minimum Division×**100000**

Weight Calibration	Calibration with weight is the methord that using weight on site. Steps as follows: First Step：select unit、decimal point、division these weighing parameters based on requirements. Second step： empty hopper, click 【Empty Calibration】. This step is calibrate the zero point, Demand: empty the hopper, and the platform is stable. Third step： add the weight on the platform, wait for the stability of platform.and then click【Weight Calibration】, input the weighing value in the pop-up box, click to confirm then the weight calibration finished.

4.2 Weighing Parameters

In the menu interface,click【**Weight Parameter**】enter to current parameter item to view and set attributive parameter information.

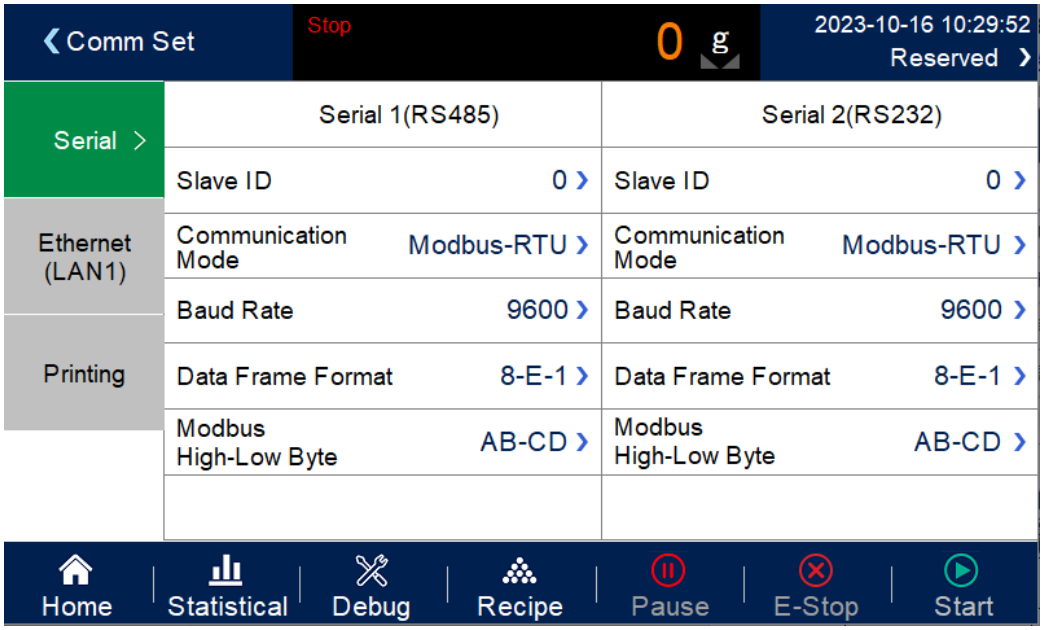


Parameter	Description
1.Zero Range	Init Value：50；Range：1～99（percentage of full scale）
2.STAB Range/Time	During the STAB Time,the weight change range is within this set value,and the device determines that the weighing platform is stable STAB Range Init value: 2；range：0～99(d)。 STAB Time Init value：0.3；range：0.1～9.9。（unit:s）
3.Zero Range/Time	The weight change range is within this set value,controller display zero automatically.when the value is 0, the zero tracing function is disable. Zero Range, Init value:0；range：0～9(d)。 Zero Time：2.0；range：0.1～99.9.（unit s）

4.PWR-ON Zero	On/Off, set to "On", controller will perform zero operation automatically. Init Value: Off.
5.A/D Sample rate	A/D sample rate, 120times/s、240times/s、480times/s、960times/s, Init value: 480times/s
6.Digital filter	AD digital filter parameter: 7: Non-filter; 9: Strongest filtering. Init Value: 7.Range: 0～9
7.Dynamic filter	Whether perform fiter operation when packing

4.3Communication Parameters

GM9907-L6(L6D) provide two serial commucation port. Serial port output definition refers 2.5 chapter, the correct serial port parameters could make the communication normally.



Communication Parameter	Communication Parameter subitems	Descriptions
COM Parameter (Serial port 1（485）、Serial port 2（232）)	1.Slave ID	Init value: 1; 1~99 optional.
	2.Communication methord	Init value: Modbus-RTU.Modbus-RTU /print/Continuous Send/Re-Cont optional.
	3.Baudrate	Init value: 38400; 9600/19200/38400/57600/115200 optional.
	4.Data Format	Init value: 8-E-1(8 data bit – even parity check-1 stop bit); 8-E-1/8-N-1 optional.
	5.Modbus Dword Format	Modbus communication display mode: Init value: AB-CD(high word first); AB-CD(high word first)/CD-AB(low word first)optional.
Ethernet Port	1.Communication Mode	Fixed value: Modbus-TCP.

	2.modbus-TCP Dword Format	Init value:CD-AB. 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	1.Auto Print	ON/OFF；when set to “ON”，the current packing result will be printed automatically after every pack is completed.(the serial port should be selected as “Print”)，Init value:off
	2.Print Format	Init value：24 columns of printing；24 columns of printing/32 columns of printing
	3.Print Language	Init value：Chinese；Chinese/English
	4.Print Line Nos.	The numbers of lines after the print is completed.Init value:3；0~9 optional.

4.4 I/O Module

GM9907-L6(L6D) filling controller provide 12 input and 16 output, connect the Controller with the extral devices.

The Data of Input and Output define as follows. (Output 1-16 map OUT1~OUT16 port，Input 1-12 map IN1~12 port).

Single Scale defualtly Define：

Output		Input	
Output-1	Run	Input-1	Start
Output-2	Stop	Input-2	E-Stop
Output-3	A Coarse Fill	Input-3	A Zeroing
Output -4	A Fine Fill	Input-4	Clear Alarm
Output -5	A Result Checking	Input-5	Change Recipe
Output -6	A Over/Under	Input-6	APipe Drop/ Rise
Output -7	A Alarm	Input-7	A Start Filling
Output -8	A Bucket Move	Input-8	A Manual Coarse Fill
Output -9	Pipe Drop(Air Drived）	Input-9	AManual Fine Fill
Output10	Batch Finish	Input-10	Clear All ACUMs
Output-11	A Pipe Drop （Motor Drived）	Input-11	None
Output-12	A Pipe Rise （Motor Drived）	Input-12	None
Output-13	Fill		
Output -14	Empty		
Output -15	None		
Output -16	None		

Dual Scale Defaultly Define：

Output	Input

Output-1	Run	Input-1	Start
Output-2	Stop	Input-2	E-Stop
Output -3	A Coarse Fill	Input-3	A Zeroing
Output -4	A Fine Fill	Input-4	B Zeroing
Output -5	A Alarm	Input-5	Clear Alarm
Output -6	A Bucket Move	Input-6	Change Recipe
Output -7	APipe Drop(Air Drived）	Input-7	APipe Drop/ Rise
Output -8	B Coarse Fill	Input-8	BPipe Drop/ Rise
Output -9	B Fine Fill	Input-9	None
Output -10	BAlarm	Input-10	None
Output -11	BBucket Move	Input-11	AManual Fine Fill
Output -12	BPipe Drop(Air Drived）	Input-12	BManual Fine Fill
Output -13	Batch Finish		
Output -14	None		
Output -15	AResult Checking		
Output -16	BResult Checking		

4.4.1Output、Input Define

The Data of Output, Input can be defined by actual application. We could modify the definition of I/O by the IO Parameters of Menu Interface. Every IO corresponds to one code，the details are as follows：

The details of I/O module description as follows:

Output		
Code	**Content**	**Description**
O0	None	
O1	Run	When the controller is in the running state, the output port signal is valid.
O2	Stop	When the controller is in the stop state, the output port signal is valid.
O3	**A** Coarse Fill	Use to control the fast-fill's device of supplement mechanism.
O4	**A** Fine Fill	Use to control thes slow-fill's device of supplement mechanism.
O5	**A**Result Waiting	Means the end of the filling process. The output port signal is valid before the end of Fine Flow to moving the bucket.
O6	**A**Over/Under	When doing Over/Under detection, if The current weight is not within the set range, an alarm will be output, and this output signal is also valid.
O7	**A**Alarm	The signal is valid when there is alarm message occurs in controller.
O8	**A**Bucket Move	After the end of result waiting, the signal is valid, use to control the marterial bucket move out the weighing plateform. If the weight less than "Weight Range For

		Bucket Move", and after the delay of moving bucket, the signal will be invalid.
O9	**A**PipeDrop(air Drived)	Use to control the air-drived device to drop pipe.
O10	**B** Coarse Fill	Use to control the fast-fill's device of supplement mechanism.
O11	**B** Fine Fill	Use to control thes slow-fill's device of supplement mechanism.
O12	**B**Result Waiting	Means the end of the filling process. The output port signal is valid before the end of Fine Flow to moving the bucket
O13	**B**Over/Under	When doing Over/Under detection, if the current weight is not within the set range, an alarm will be output, and this output signal is also valid.
O14	**B**Alarm	The signal is valid when there is alarm message occurs in controller.
O15	**B**Bucket Move	After the end of result waiting, the signal is valid, use to control the marterial bucket move out the weighing plateform. If the weight less than "Weight Range For Bucket Move", and after the delay of moving bucket, the signal will be invalid.
O16	**B**Pipe Drop（Air Drived）	Use to control the air-drived device to drop pipe.
O17	Fill	Under the dual level control mode, it is used to control the feeding of the backup hopper.
O18	Empty	In the single/double material level control mode, when the input signal of the material level is invalid, the signal output is valid to indicate the shortage of material in the material preparation hopper.
O19	Batch Finish	The set number of batches is completed, and the controller prompts that the batch is complete and the signal output is valid.
O20	Logic Output **1**	Output signal of auxiliary logic function 1.
O21	Logic Output **2**	Output signal of auxiliary logic function 2.
O22	Logic Output **3**	Output signal of auxiliary logic function 3.
O23	Logic Output **4**	Output signal of auxiliary logic function 4.
O24	Logic Output **5**	Output signal of auxiliary logic function 5.
O25	Logic Output **6**	Output signal of auxiliary logic function 6.
O26	Slow-Stop	When the controller is in a slow stop state, the signal output is effective.
O27	Pause	When the controller is in a paused stop state, the signal output is effective.

O28	**A**Pipe Drop(Motor Drived)	Under the electric Pipe Drop control mode, it is used to control the downward movement of the material pipe.
O29	**A**Pipe Rise(Motor Drived)	Under the electric Pipe Drop control mode, it is used to control the upward movement of the material Pipe.
O30	**B**Pipe Drop(Motor Drived)	Under the electric Pipe Drop control mode, it is used to control the downward movement of the material Pipe.
O31	**B**Pipe Rise(Motor Drived)	Under the electric Pipe Drop control mode, it is used to control the upward movement of the material Pipe.
O32	**A**Tare Output	When the controller is running, if it detects that the current weight is within the tare range and stable, then the port output is valid.
O33	**B**Tare Output	When the controller is running, if it detects that the current weight is within the tare range and stable, then the port output is valid.
O34	**A**:Threshold	During the filling process, if the weight >= filling threshold weight, then the output is valid.
O35	**B**:Threshold	During the filling process, if the weight >= filling threshold weight, then the output is valid.
O36	**A**Run	When the A scale is in the running state, the signal is valid.
O37	**A**E-Stop	When the A scale is in the stop state, the signal is valid.
O38	**A**Stop	When A scale is in a slow stop state, the signal output is valid.
O39	**A**Pause	When A scale is in a paused state, the signal output is valid.
O40	**B**Run	When the B scale is in the running state, the signal is valid.
O41	**B**E-Stop	When the B scale is in the stop state, the signal is valid.
O42	**B**Stop	When B scale is in a slow stop state, the signal output is valid.
O43	**B**Pause	When A scale is in a paused state, the signal output is valid.
	Input	
I0	None	If the port number is defined as undefined, it means that this input port is undefined.
I1	Start	Pulse type signal. when the signal is valid the controller will enter running state.
I2	E-Stop	Pulse type signal. when the signal is valid the controller will enter stop state.
I3	Stop	Pulse type signal. when the signal is valid the controller will enter a slow stop state, it will automatically switch to a stop state after waiting for the completion of this waiting process(result checking).

I4	Pause	Pulse type signal. This signal is valid and the controller will enter a paused state. After starting, the previous process can be resumed.
I5	**A**Zero	Pulse type signal. This signal is valid and the controller will perform a weight reset.
I6	BZero	Pulse type signal. This signal is valid and the controller will perform a weight reset.
I7	Clear Alarm	Pulse type signal. Use to clear the alarm message of controller.
I8	Change Recipe	Pulse type signal. Once valid, automatically change the recipe number to the next recipe with a target value other than 0.
I9	**A**Pipe Drop/Rise	Pulse type signal. Used to control the action of the pipe drop mechanism. This signal is valid once, and the controller executes the pipe drop action. Once again effective, the controller performs a pipe rising action.
I10	**A**Manual Coarse Fill	Pulse type signal. It operates in a stopped state and is used to manually turn on and off the fast flow state of the controller. Once valid, open, then close if valid again.
I11	**A**Manual Fine Fill	Pulse type signal. The slow flow state that operates in a stopped state and is used to manually turn on and off the controller. Once valid, open, then close if valid again.
I12	**A**Start Filling	Pulse type signal. When the "Feeding Start Method" parameter is set to "Manual filling", This signal needs to be valid before starting the filling process.
I13	**B**Pipe Drop/Rise	Pulse type signal. Used to control the action of the pipe drop mechanism. This signal is valid once, and the controller executes the pipe drop action. Once again effective, the controller performs a pipe rising action.
I14	**B**Manual Coarse fill	Pulse type signal. It operates in a stopped state and is used to manually turn on and off the fast flow state of the controller. Once valid, open, then close if valid again.
I15	**B**Manual Fine Fill	Pulse type signal. The slow flow state that operates in a stopped state and is used to manually turn on and off the controller. Once valid, open, then close if valid again.
I16	**B**Start filling	Pulse type signal. When the "Feeding Start Method" parameter is set to "Manual filling", This signal needs to be valid before starting the filling process.
I17	Start/E-Stop	Level type signal. When the signal is valid, execute the start, and if it is invalid, execute the emergency stop
I18	Start/Stop	Level type signal. When the signal is valid, execute the start, and if it is invalid, execute the slow stop
I19	Fill	Level type signal. Use to connect lower material level device of the material preparation hopper
I20	Empty	Level type signal. Use to connect loading material level device of the material preparation hopper
I21	Clear All	Pulse type signal. It works in the stopped state, When the

	ACUMs	signal is valid, clear all cumulative data, including total cumulative, formula cumulative, and user cumulative.
I22	Clear Total ACUM	Pulse type signal. In the stopped state, this signal only clears the total cumulative data, excluding formula accumulation and user accumulation.
I23	Clear Current Recipe ACUM	Pulse type signal. In the stopped state, this signal only clears the cumulative data of the current formula.
I24	Clear All Recipe ACUM	Pulse type signal. In a stopped state, this signal effectively clears the cumulative data of all formulas.
I25	Clear Current User ACUM	Pulse type signal. Pulse type signal. This signal is valid and only clears the cumulative data of the current user.
I26	Clear All user ACUM	Pulse type signal. Pulse type signal. When the signal is active in the stopped state, it clears the accumulated data of all users
I27	Logic Trigger Input 1	Custom trigger input signal for auxiliary logic 1.
I28	Logic Trigger Input2	Custom trigger input signal for auxiliary logic 2.
I29	Logic Trigger Input3	Custom trigger input signal for auxiliary logic 3.
I30	Logic Trigger Input4	Custom trigger input signal for auxiliary logic 4.
I31	Logic Trigger Input5	Custom trigger input signal for auxiliary logic 5.
I32	Logic Trigger Input6	Custom trigger input signal for auxiliary logic 6.
I33	**A**Pipe Drop on pos	Level type signal. The input of the Pipe Drop in place detection signal used to connect the Pipe Drop mechanism, which is valid, indicates that the Pipe Drop has been in place.
I34	**A**Pipe rise on pos	Level type signal. The signal input used to connect the Pipe Rising mechanism to the pipe rise in place detection signal, which is valid, indicates that the pipe rising has been in place.
I35	**B**Pipe Drop on pos	Level type signal. The input of the Pipe Drop in place detection signal used to connect the Pipe Drop mechanism, which is valid, indicates that the Pipe Drop has been in place.
I36	**B**Pipe Rise on pos	Level type signal. The signal input used to connect the Pipe Rising mechanism to the Pipe Rising in place detection signal, which is valid, indicates that the Pipe Rising has been in place.
I37	Manual run once	Pulse type signal. When this signal is valid, the Controller will enter the operating state and return to the stopped state after filling once.

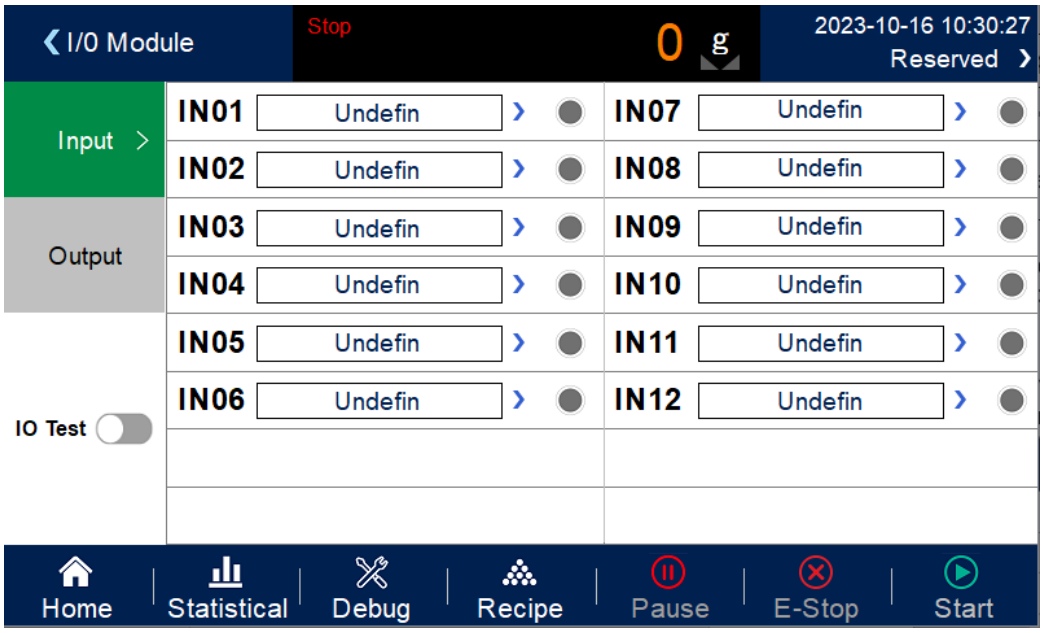
I38	**A**Start/E-Stop	Level type signal. When this signal is valid, the A scale begin to start, otherwise A Scale performs stop action.
I39	**A**Start/Stop	Level type signal. When this signal is valid, the A scale begin to start, and invalid for slow stop execution.
I40	**B**Start/E-Stop	Level type signal. When this signal is valid, the B scale begin to start, and invalid for emergency stop execution.
I41	**B**Start/Stop	Level type signal. When this signal is valid, the B scale begin to start, and invalid for slow stop execution.
I42	**A**Start	Pulse type signal. When this signal is valid, the A scale will enter the operating state.
I43	**A**E-Stop	Pulse type signal. When this signal is valid, the A scale will enter a stop state.
I44	**A**Stop	Pulse type signal. When this signal is valid, the A scale will stop after completing the Result checking process
I45	**A**Pause	Pulse type signal. When this signal is valid, the A scale will enter a paused state. After starting, the previous process can be resumed.
I46	**B**Start	Pulse type signal. When this signal is valid, the scale B will enter the operating state.
I47	**B**E-Stop	Pulse type signal. When this signal is valid, the scale B will enter a stop state.
I48	**B**Stop	Pulse type signal. When this signal is valid, the scale B will stop after completing the waiting process
I49	**B**Pause	Pulse type signal. When this signal is valid, the scale B will enter a paused state. After starting, the previous process can be resumed.

*Note：**1**.In single scale mode，（**O36~O43** and **I38~I49**）all be disable state.

2.In Dual scale mode, **I38**、**I39**、**I40**、**I41** are level signal，which locks with **I17**、**I18**，when I17 and I18 are defined, **I38**、**I39**、**I40**、**I41** can't be defines，vice versa.

4.4.2 IO Test

User could check whether the connection between I/O of controller with extral device is normal.IO Test interface is as follows：



IO test switch: First, confirm that the "IO test switch" on the left side is turned on. If this switch is not turned on, the output switch value is the actual function output. If this switch is turned on, the output switch value can be switched using the screen button

Output port Test： In the IO testing interface, pressing the button behind the corresponding output can forcibly switch between the valid and invalid states of the corresponding output port. The interface port color will light up, and the corresponding external connection output state should be valid. If invalid, it indicates abnormal connection. Check the switch power input, wiring, etc.

Input port Test： In the IO test interface, when the external input signal is valid, the corresponding input definition port color under the interface will light up in green. When the external input is valid and there is no response from the interface, it indicates that the connection is abnormal. Check the switch power input, wiring, etc.

4.5Process Parameters

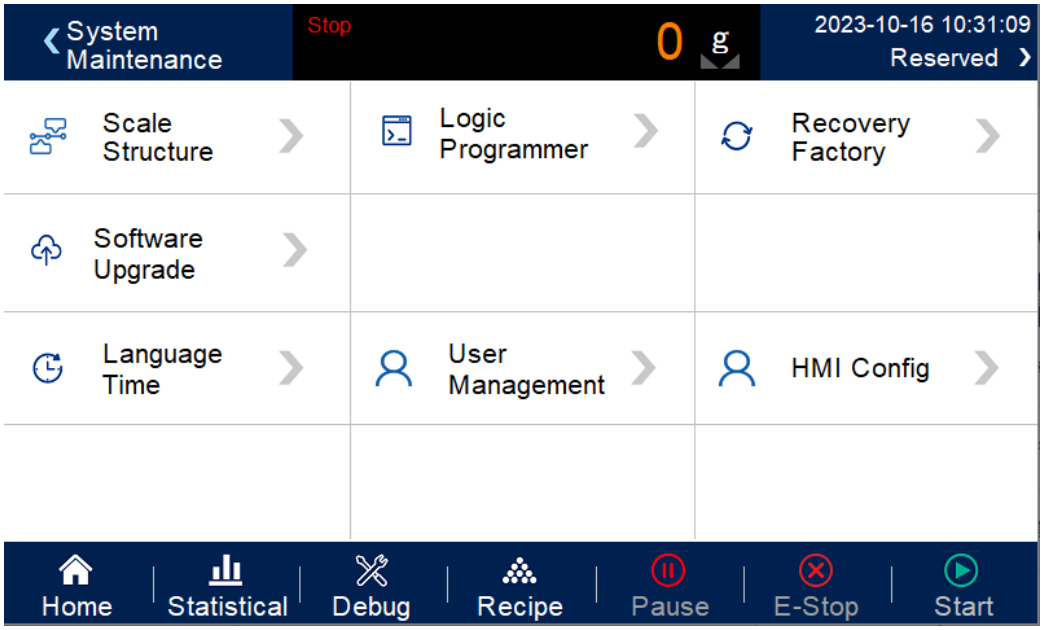
Process Parameter	Parameters	Description	
Starting conditions	**1.**Pipe Drop function	Initial value：**0**，OFF. **1**.Manual Pipe Drop（External provide Pipe Drop input signal） **2**.Auto Pipe Drop（Automatically drop the pipe when the filling start conditions are met）	
	2.fill start mode	**0**.Manual start filling（External provide filling start input signal） **1**.Auto start filling（start to fill when the fill start confition is reached）	
	3.Tare setting	**0**.not tare； **1**.tare by actual weight. **2**.tare by tare setting.	
	4.fill start condition	Initial value：**0**. **0**. Greater than the starting zero value and stable. **1**. within the tare range and stable. **2**. greater than the starting zero value without stability. **3**. within the tare range without stable.	
	5.tare range checking time	Tare range=tare value±tare error value	The parameter is only available when start within tare range, when the weight is within the tare range and last exceed the time is considered to be within the tare range.Initial value:**1.0**.Range:**0.0**~**99.9**（seconds）

	6.tare detection filter level		The parameter is only available when start within the tare range.the weight filter level when detecting the tare.Initial value:**3**.Range:**0**~**9**
Dismantling process	**1.**delay befor dropping Pipe	Start this delay after meeting the confition of pipe droping. When the time is over and then start the pipe droping process. Initial value:0.5. Range:0.0~99.9(Seconds)	
	2. alarm time for dropping pipe timeout.	From the start of pipe drop, if the signal for drop Pipe in place is still invalid, after this time, an alarm will sound. Initial value: **4.0**.Range:**0.0**~**99.9**（Seconds）	
	3.Delay befor raising pipe	After the end of filling, the action of rising Pipe will be performed after this time.Initial value:**1.0.Range:0.0**~**99.9**（seconds）	
	4.Alarm time for raising pipe timeout	From the start of pipe drop, if the signal for raising pipe in place is still invalid, after this time, an alarm will sound. Initial value:**4.0**.Range：**0.0**~**99.9**（Seconds）（the control mode of drop Pipe: Electric single limit and Electric dual limit）	
	5.Pipe Stuck Protect Function	Detect the protection of barrel collision befor the end of drop Pipe.	
	6.Weight For Check Pipe Stuck	Befor the end of drop Pipe, detecting the real-time Detect the real-time weight minus the weight at the beginning of the next Pipe, and if the weight is greater than or equal to this, it is considered a barrel collision	
Filling process	**1.** Delay before filling	Delay time before the start of feeding.Initial Value：**0.5**.Range：**0.0**~**99.9**(s)	
	2. COMP.Inhibit Timer(Co-F)	Prohibit judging time when the fast feeding process starts.Initial Value:**0.5.** Range：**0.0**~**99.9(**s)	
	3. COMP.Inhibit Timer(Fi-F)	Prohibition time for fast to slow feeding process. Initial Value:**1.0**. Range：**0.0**~**99.9**(s)	
	4. Result Check Timer	Start the delay after the slow heating is completed, and after the delay ends, perform out of tolerance detection, record the cumulative filling results, and other processing.Initial value：**1.0**.Range：**0.0**~**99.9**(s)	
	5.Intelligent fiilling control	After opening, the controller will automatically adjust the remain value based on each filling situation.	
	6.Automatic filling speed adjustment	Set the filling speed in automatic filling control mode.Initial value:**1.0**. Range：**0**~**9**	
	7. Positive error control function	After opening, the controller will try to control the filling error to a positive value as much as possible.	
	8. Filling filtering level	Initial value：**4**. Range：**0**~**9**	
	9.Filling threshold weight value	If the weight during the filling process is greater than or equal to the set value, the IO module filling threshold output is valid.	
	10. Leak detection function	Whether leakage is detected during the filling process can be detected through two methods: the lower limit	

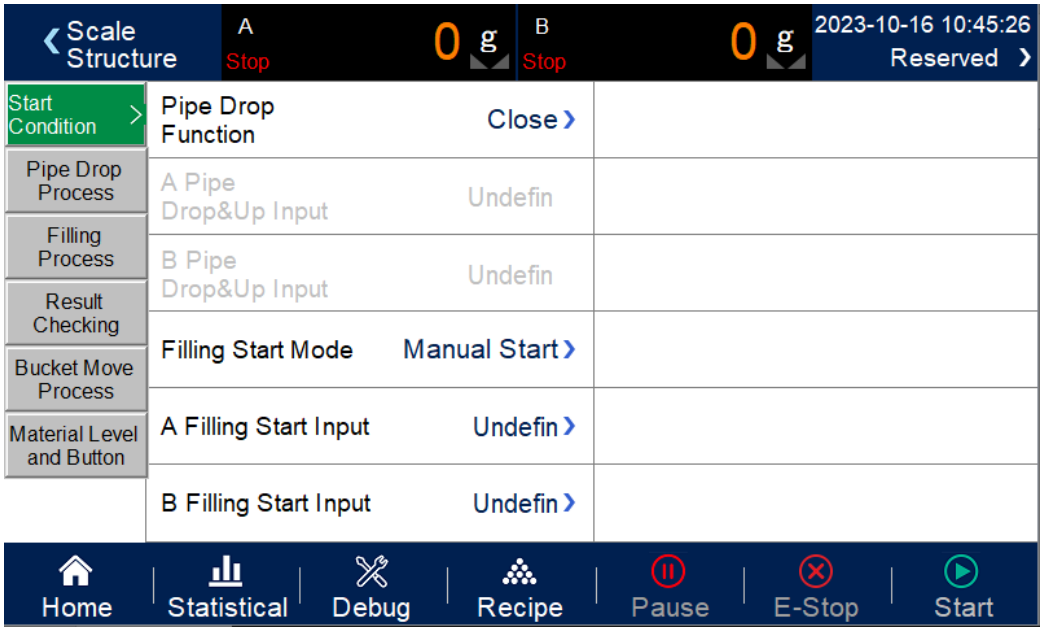
		of fast filling flow and Weight drop alarm weight. Initial value: Off
	11. Co-F Flowrate Low Limit	During the rapid filling process, if the flow rate falls below the set value, an alarm will be triggered and the system will enter a paused state.
	12. Weight Sudden Drop Alarm	During the rapid filling process, if the weight decreases by more than the set value, an alarm will sound and the system will enter a paused state.
Result checking	**1**. Wait Stable For Result Checking	Is it necessary to judge whether the weight is stable before proceeding to the next process after the waiting holding time has ended.
	2.Over/Under Detector	After opening, it will be forced to stabilize, and after stabilizing, check whether the weighing result is over or not.
	3.OverLimit value	When the weighing result is greater than the target value+over value, it is considered Over.
	4.UnderLimit value	When the weighing result is less than the target value-under value, it is considered Under.
	5.Over/Under Pause Switch	When opened, the controller will alarm and wait for processing in case of over or under tolerance.
	6.Over/Under Alarm Output Time	Set the duration of alarm signal output.Initial value：**2.0**.Range：**0.0~99.9**(s)
	7.UnderLimit Compensation	Start the replenishment function when there is a material shortage.
	8.Compensation Max times	Upper limit of replenishment times.Initial value：**5.0**.Range：**1~999**。
	9.Compensation Fill-On Timer	Output effective time of slow filling signal during material replenishment.Initial time：**0.5**. Range：**0.1~99.9**(s)
	10.Compensation Fill-OFF Timer	The invalid duration after the output of the slow filling signal is effective during material replenishment. Initial value：**0.5**。Range：**0.0~99.9(s)**
	11.Free Fall correction.	After opening, it will be forced to stabilize, and after stabilizing, the weighing result will be recorded and the fall drop value will be automatically corrected.
	12.Correction Numbers	How many consecutive weighing results are collected and calculate for correction.Initial value：**1**.Range：**0~99**
	13.Correction Effective range	Error in weighing results ≤ target value * The drop correction range will only be used for the calculation of drop correction in this result.Initial value：**10**.Range：**0~99.9**
	14. Correction Percentage	The calculated value of the drop correction is multiplied by this amplitude and corrected to the drop value
Bucket transfer process	**1.**Weight Range For Bucket Move	If the weight value is lower than the judgment range for moving the bucket, it is considered that the bucket has been moved and the delay in moving the

		bucket begins.Initial value：**10.0.**Range：**0.0~99.9** (percentage).
	2.Bucket Move Delay Timer	The entire process is considered to have ended after the delay in moving the bucket has ended.Initial value：**0.5**.Range：**0.0~99.9**(s)
	3. Start Pre-Delay Again	The delay time from the end of the barrel transfer delay to the start of the next filling process.Initial value：**0.5**. Range：**0.0~99.9**(s)
	4. Bucket Move Filter Level	Set the filtering level during the bucket transfer process.Initial value: **2**. Range: **0~9**.

4.6System Maintenance



4.6.1Scale Structure



Parameter items	Parameters	Introduction
Starting filling conditions	**1.** Pipe Drop function	Initial value：**0**, means closed。 **1**. Manually drop Pipe（External input signal required for pipe drop） **2**.Automatically drop Pipe(Automatically drop Pipe when the filling start conditions are met)
	2.A Pipe Drop/Up Input	This parameter is not available for closing or automatic drop Pipe. Manual Drop Pipe input ports 1-12 are optional.
	3.B Pipe Drop/Up Input	This parameter is not available for closing or automatic drop Pipe. Manual Drop Pipe input ports 1-12 are optional.
	4.Filling Start Mode	**0**. Manual start filling: requires external input signal for filling start, and the signal port can be customized (0-12).） **1**.Automatically start filling(Automatically start filling when the filling start conditions are met)
	5.A Filling start Input	Automatic filling does not have this parameter, input ports 1-12 are optional.
	6.B Filling start Input	Automatic filling does not have this parameter, input ports 1-12 are optional.
Pipe Drop process	**1.**Pipe Drop Control	**0**. Pneumatic infinite position; **1**. Pneumatic single limit(drop Pipe in place) **2**. Electric single limit(Raise the Pipe in place); **3**. Electric double limit
	2.A Pipe Drop Output	Select the output port corresponding to the function signal(The firing method is pneumatic and effective）, Customizable output port（0-16）
	3.A Pipe Drop Output(Motor)	Select the output port corresponding to the function signal(The Drop the Pipe method is electric and effective）,

		Customizable input port（0-16）
	4.A Pipe Rise Output	Select the output port corresponding to the function signal.(The firing method is electric and effective)， Customizable output port（0-16）
	5.A Pipe Drop Done Input	Select the input port corresponding to the function signal(The firing method is effective with electric double limit and pneumatic single limit)， Customizable input port(0-12）
	6.A Pipe Rise Done Input	Select the input port corresponding to the function signal(Effective when the Drop Pipe method is electric)， Customizable input port(0-12）
	7.B Pipe Drop Output	Select the input port corresponding to the function signal(Effective when the firing method is pneumatic)， Customizable input port（0-16）
	8.B Pipe Drop Output(Motor)	Select the input port corresponding to the function signal(Effective when the Drop Pipe method is electric)， Customizable input port(0-16）
	9.B Pipe Rise Output	Select the input port corresponding to the function signal(Effective when the Drop Pipe method is electric)， Customizable input port(0-16）
	10.B Pipe Drop Done Input	Select the input port corresponding to the function signal(The Drop Pipe method is effective with electric double limit and pneumatic single limit)， Customizable input port(0-12）
	11.B Pipe Rise Done Input	Select the input port corresponding to the function signal(Effective when the Drop Pipe method is electric)， Customizable input port(0-12）
Filling process	**1.** Filling signal output Type	Combination/Separate，Combination：Both Co-Fi and Fi-Fi are effective during fast filling；Separate：During fast filling, only the CO-Fi output is valid. Initial value: Combination Output.
	2.A Coarse Fill Output	Select the output ports OUT1-16 corresponding to the function.
	3.A Fine Fill Output	Select the output ports OUT1-16 corresponding to the function
	4.B Coarse Fill Output	Select the output ports OUT1-16 corresponding to the function
	5.B Fine Filling Output	Select the output ports OUT1-16 corresponding to the function
Result checking	**1**.Over/Under Detector	After opening, it will be forced to stabilize, and after stabilizing, check whether the weighing result is out of tolerance or not.
	2.Over/Under alarm output	Select the output ports OUT1-16 corresponding to the function
Bucket Move Process	**1.A**Bucket Move Output	Select the output ports OUT1-16 corresponding to the function
	2.B Bucket Move Output	Select the output ports OUT1-16 corresponding to the function
Material level&Butt	**1**.Material Level Detector	Set the number of material points

on	**2**.Empty Input	Select the input ports IN1-12 corresponding to the function
	3.Empty Output	Select the output ports OUT1-16 corresponding to the function
	4.Full Input	Select the input ports IN1-12 corresponding to the function
	5.Supplement Refill Output	Select the output ports OUT1-16 corresponding to the function
	6. HMI Start/ Stop Button Enable	After opening, the HMI start/stop button will be available
	7. HMI Manual Button Enable	After opening, the HMI manual button will be available

4.6.2 Logic Program

Auxiliary logic programming function, can define up to 6 sets of auxiliary logic trigger signals, and can set the effective time and output port after the auxiliary logic signal is triggered. Simple logic signal output can be configured to control other auxiliary devices, and the 6 sets of auxiliary logic signals can also be controlled mutually.

Auxiliary logic programming parameter items **1-6**	Parameters	Introduction
Logic Type	Close	Select the type of auxiliary logic programming signal based on the logic to be implemented.
	Delay On	
	Delayed OFF	
	Delay On and Delay OFF	
	OFF-ON,Edge Trigger	
	ON-OFF Edge Trigger	
Logic	Self-Define Trigger Input	After setting any one of the 1-12 inputs as a

Trigger Signal		trigger signal, the input port will be fixed as a trigger signal.
	IN ports **1-12**	If any one of the 1-12 input ports is set as a trigger signal, the input can be either a trigger signal or a functional signal of the input port.
	Definition of IO	After setting the trigger signal to "an internal function signal", trigger output will be carried out based on the function signal; The trigger signal has 26 output definitions to choose from.
Trigger input port	**IN1~12**	Select the switch input port corresponding to the function signal, where input port -0 represents that the function is not defined.
Signal And/Or signal 2	And, Or	And：Trigger signal and trigger signal 2 must be met simultaneously to be effective. Or：Either trigger signal or trigger signal 2 is valid
Logic Trigger Signal 2	None	Turn off trigger signal 2.
	IN ports **1~12**	If any one of the 1-12 input ports is set as a trigger signal, the input can be either a trigger signal or a functional signal of the input port.
	IO Module Output Define	After setting the trigger signal to "an internal function signal", trigger output will be carried out based on the function signal; The trigger signal has 26 output definitions to choose from.
Output port	**OUT1~16**	Select the switch output port corresponding to the function signal, where output port -0 represents that the function is not defined.
Delay on timer	Unit:**0.1s**	After the trigger signal is effective, the logic output signal is only effective after a delay of this time.
Delay off timer	Unit:**0.1s**	After the trigger signal becomes invalid, the logic output signal becomes invalid after a delay of this time.
Output ON timer	Unit:**0.1s**	The duration after the logic output signal is valid, which becomes invalid after the end of this time.

4.6.2.1 Delay On

●When selecting Delay ON [Custom Input Port Trigger], the operation is as follows：

1. Set parameters and I/O Module: type select 【delay on】, if choose 【custom trigger input】trigger input port is defined as "1" (I/O Module input port 1 is shown as "auxiliary logic trigger input 1"), logic output port is defined as "1" (I/O Module output port 1 is shown as "auxiliary logic output 1"), set【delay on time】for 2 seconds.

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

● When selecting Delay On [Fixed Input Port Trigger], the operation is as follows：

1. Set parameters and I/O Module: trigger signal choose “input port 1 "(can see I/O Module input port 1 is shown as " the definition of the original unchanged”, assuming the

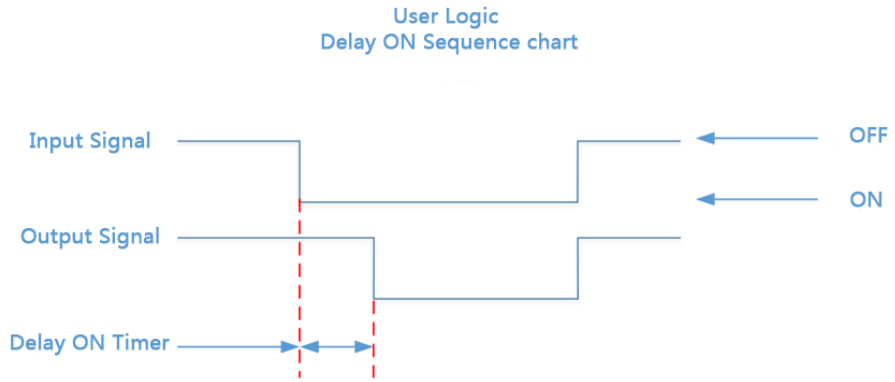
original definition is started, the function of the input port 1 can be" started "or" signals trigger"), logic output port is defined as 1 (can see the I/O Module output port 1 is shown as" auxiliary logic output 1 "), set the【 time delay on 】as 2 seconds.

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

● When selecting Delay On [IO Module Output Definition Trigger], the operation is as follows：

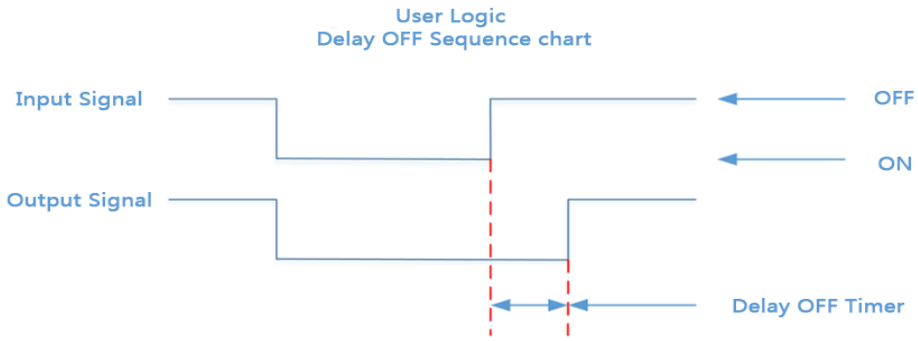
1. Set parameters and IO module: select "Run" for the trigger signal (the IO module output can be defined or not), define the logic output port as 1 (it can be seen that the IO module output port 1 is displayed as auxiliary logic output 1), and set the delay on time to 2 seconds.

2. Perform operations：After the external input is "started" and the "run" output signal is valid, the【delay on time】starts to run until the delay on time of 2 seconds ends. The logic output signal port 1 outputs effectively until the "emergency stop or pause" is valid, that is, the "run" output signal is invalid. After the "run" output signal is invalid, the logic output signal port 1 becomes invalid.



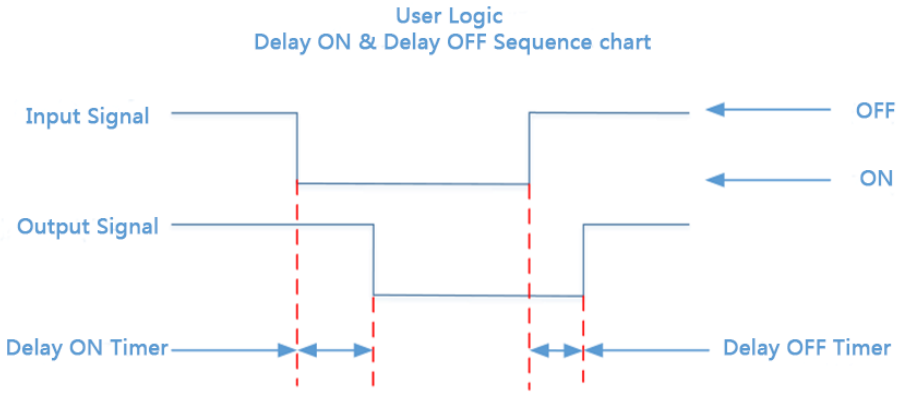
4.6.2.2delay off

Relevant parameters：type selections【Delay off】, choose【Trigger signal】, set【Trigger input port】,【Logic output port define】,【Delay off time】. Operations refer to "Delay on". Output functions as below:



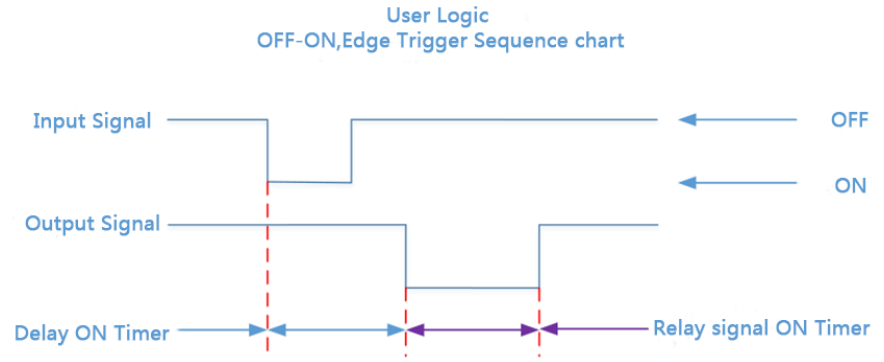
4.6.2.3 Delayed On and Delayed Off

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



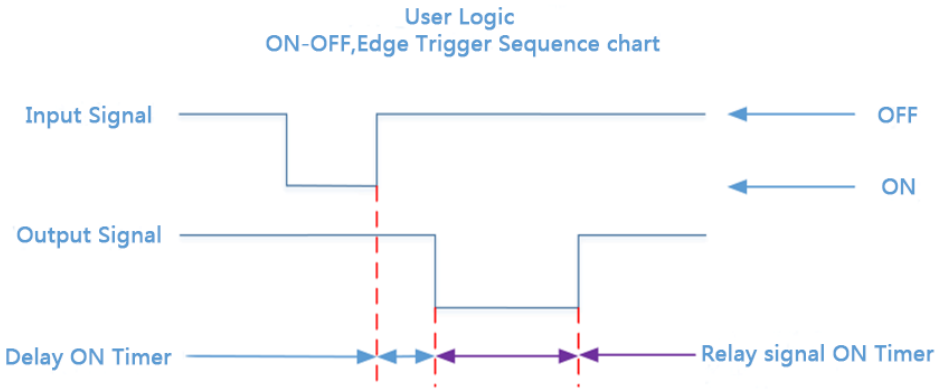
4.6.2.4 Invalid - Valid jump edge triggered

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



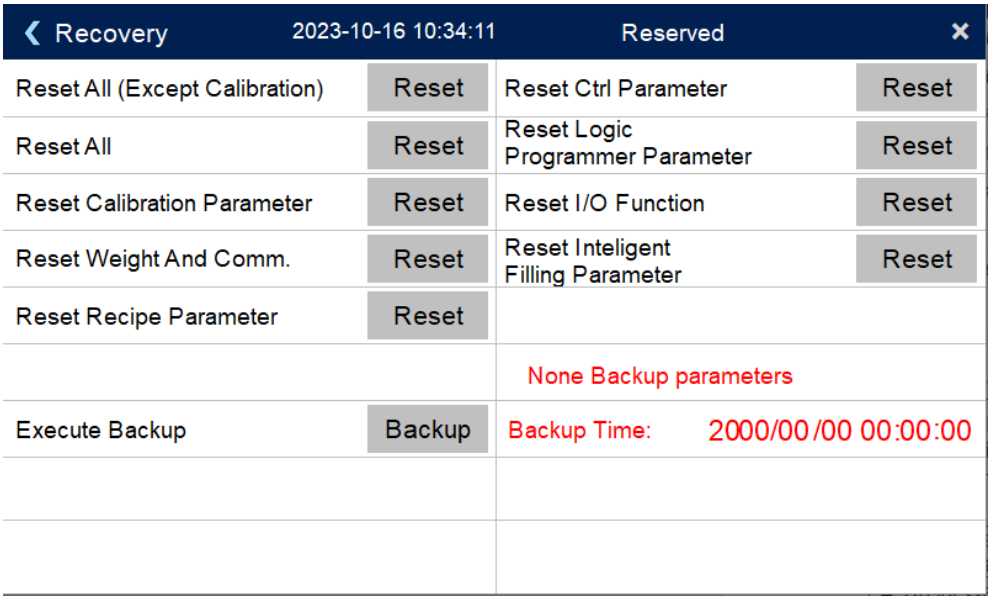
4.6.2.5 Valid - Invalid jump edge triggered

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



4.6.3 Restore Factory

System administrators can perform data recovery and backup by selecting 【Restore Factory】 in 【System Maintenance】.



1. Reset all parameters (except calibration)	Click this item to restore all parameter values of the controller (excluding calibration parameters) to the factory settings.
2. Reset all parameters	Click this item to restore all parameter values of the controller to the factory settings.
3. Reset Calibration parameters	Click this item to restore the calibration parameter values to the factory settings.
4. Reset Weighing and Communication Parameters	Click this item to restore the weighing and communication parameter values to the factory settings.
5. Reset Recipe Parameters	Click this item to restore the formula parameter values to the factory settings.

6. Reset Process Control parameters	Click this item to restore the process control parameter values to the factory settings.
7. Reset auxiliary logic programming parameters	Click this item to restore the auxiliary logic programming parameter values to the factory settings.
8. Reset IO Module parameter	Click this item to restore the IO definition parameter value to the factory setting value.
9. Reset intelligent automatic filling parameters	Click this item to restore the intelligent automatic filling parameter value to the factory setting value.
10. Perform parameters backup	Click on this controller to back up the current parameter settings.
11. Restore backup data	Click on this controller to restore the backed up parameter settings to the current parameter settings.
12. Delete parameter backup	Click on this controller to delete the backed up parameter settings.

4.6.4 Software Upgrading

4.6.4.1 Front-end upgrade steps

Steps as follows:

1.	Insert the USB drive containing the upgrade kit "**tpcbackup**" into the controller;
2.	Power on the instrument and the message 'You are using the mcgsTpc USB flash drive comprehensive function package. Click' Yes' to enter the system settings interface and start the comprehensive function package. Click 'No' to exit 'will pop up; Click 'Yes' and the' User Project Update 'button will pop up.
3.	After clicking the "User Project Update" button, select the GM9907-L6 project to start downloading.
4.	Successfully downloaded and automatically restarted

4.6.4.2 Back-End Upgrade steps

Steps as follows:

1.	Insert the USB drive into the computer and create a new "**GM9907-L6**" folder inside the USB drive.
2.	Save the "**GM9907-L-Upload. gm**" file to the "**GM9907-L6**" folder.
3.	Insert the USB drive into the controller, switch to system administrator privileges, and go to the System Maintenance Software Upgrade interface. Long press and hold the blank space in the bottom right corner for 5 seconds to pop up the "Click Upgrade" button. Jump to the upgrade interface, click Upgrade, and then click Upgrade again. The word "Upgrading in Progress" appears, indicating that the instrument panel is upgrading to the backend.
4.	After the progress bar is completed and the countdown is 10 seconds, the upgrade is successful and you will be redirected to the startup login interface.

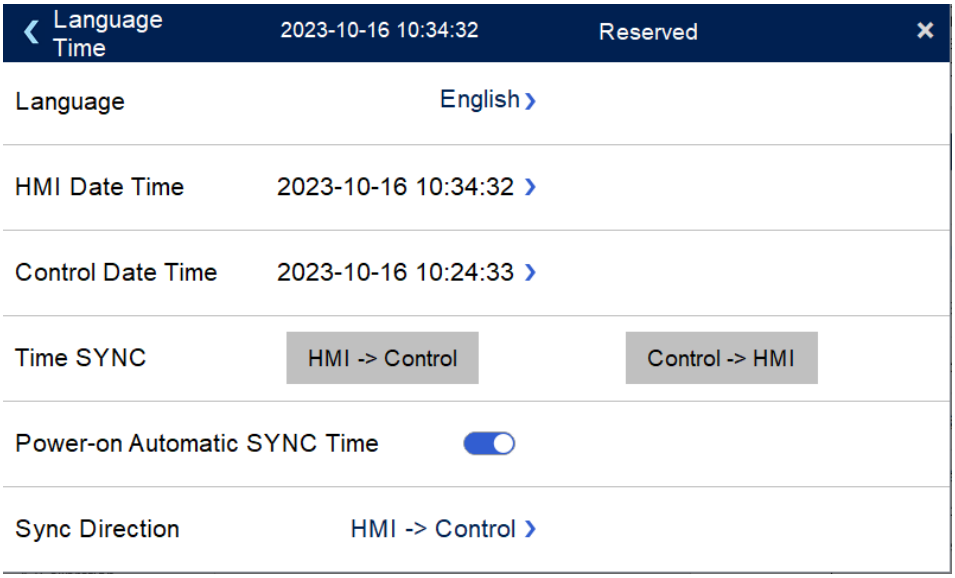
4.6.4.3 USB flash drive upgrade boot interface

Steps as follows:

1.	Save the image file (resolution:**800 * 480**, format: **.bmp**) to the root directory of the USB drive containing the upgraded boot image in the project package (**tpcbackup**);

2.	Insert the USB drive into the controller;
3.	The controller pops up a display box for the 【device manufacturer's USB drive kit】, and select 'Update startup bitmap'.
4.	Enter the logo selection interface, select the image that needs to be upgraded, click OK, and prompt that the bitmap update is successful before restarting.

4.6.5Language And Time



1.Language	Support for switching between Chinese and English
2.HMI Date&Time	Set HMI Date Time
3.Controller Date&Time	Click this item to restore the calibration scale parameter values to the factory settings.
4. Time synchronization	You can choose "HMI ->Controller" or "Controller ->HMI"
5. Power on automatic synchronization time	Automatically synchronize the time when the device is powered on, and the synchronization direction can be selected from "HMI ->Controller" or "Controller ->HMI".

4.6.6User Management

Reserved users can perform user login and editing operations through the "User Management" option.

User Management	Subitem	Introduction
User List	Users	Show loggable users. Respectively reserved user, administrator, engineer, operator 01, operator 02, operator 03.
Edit Users	**1**. Add User	create new users
	2. Modify User	modify the current username scale and user password
	3. Delete User	Delete current user.

4.6.7HMI Configuration

1. buzzer switch	Turn on the switch and the buzzer works normally.
2. buzzer time	The working duration of the buzzer is fixed at 30ms
3. Automatic screen shutdown switch	Turn on the switch and touch screen to start automatic screen shutdown.
4. Automatic screen shutdown delay	After delaying this time, the touch screen will automatically turn off，Initial value：**15.** Range：**15~1800(s)**
5. Running Forced Screen Illumination	Forced screen on and off during operation

6. Automatic screen saver switch	Turn on the switch and touch screen to activate automatic screensaver
7. Automatic screen saver delay	After delaying this time, the touch screen will automatically save the screen, with an initial value of 15. Range: 15-1800 (seconds)

4.7 Statistics

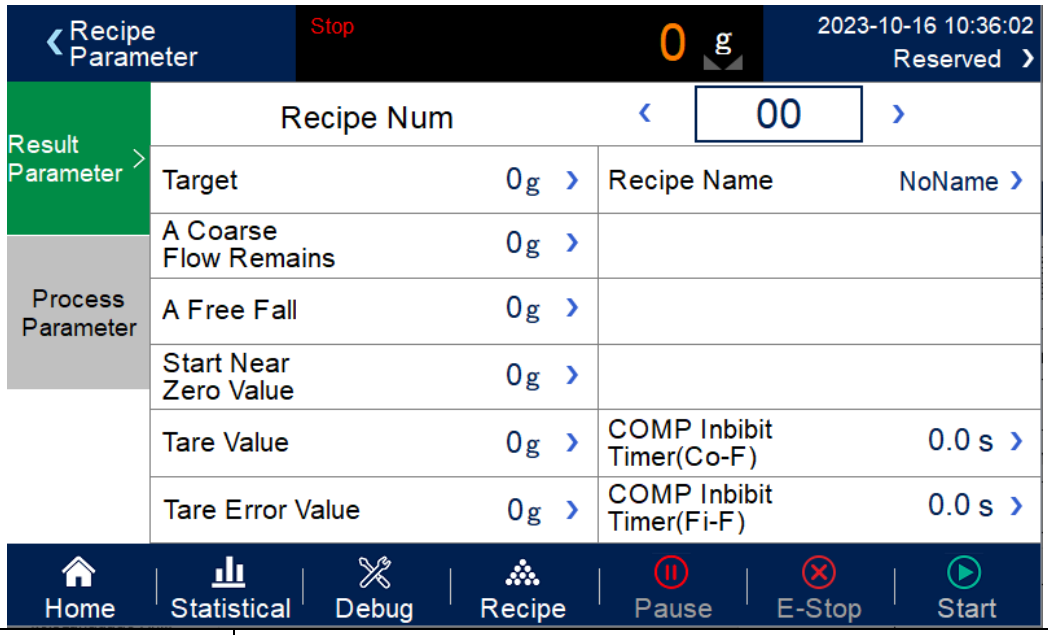
On the main interface, click 'Statistics' to enter the interface. Users can view the total cumulative/batch, formula cumulative, and historical records under the "Statistics" parameter, and perform operations such as clearing and printing them.

- In the【Total Accumulation/Batch】interface, you can view the total accumulation and batch number, and set the batch number. If there is a serial port set to print, click【Print Total Accumulation】to print the total accumulation, clear the total accumulation, and clear the batch.
- In the Total Accumulation and Batch interface【Set Batch】, the number of batches can be set. For example, when the set number of batches is completed, the controller will pop up a "Batch Complete Alarm" prompt box on the main interface, waiting for the user to process it. At this time, make the "Clear Alarm" input signal effective, or click the "Clear Alarm" button on the pop-up box. The controller will clear the alarm, or input an emergency stop to return to the stop state, which can also clear the alarm.
- Under【Formula Accumulation】, view the cumulative number of times and weight of each formula number. Click on the right side of the interface to switch between formula numbers 1-10 and 11-20. Click on【Data Processing】to clear all formula accumulations, print all formula accumulations, and print the current formula accumulations.
- In the "History" interface, you can view the history record, click "Data Processing" to export the history record through USB flash drive, or clear the history data.

4.8Recipe Parameter

Click on the recipe in the menu interface to enter the 20 recipe selection interface, which displays the recipe ID, name, and target value.

- Click the formula ID button on the right to switch between formula IDs.
- Click on each recipe column to enter the corresponding recipe parameter interface.
- Click on the top left to return to the previous level interface.



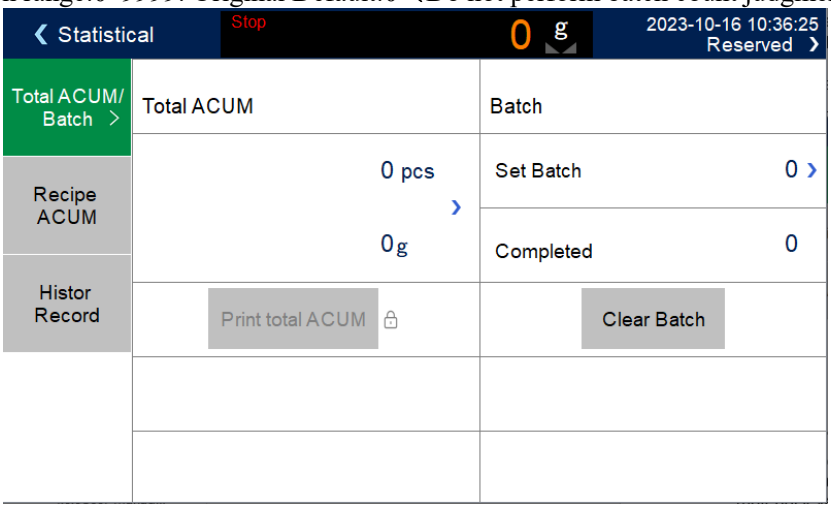
Parameters	Introduction
Used to set parameters related to packaging weight values	
1.Target	target value。
2.A Co-F Remain	If the weighing value is greater than or equal to the target value – A Co-F Remain, turn off the A Fast filling.
3.A Free Fall	If the weighing value is ≥ the target value - A Free Fall value, then turn off A slow filling.
4.B Co-F Remain	If the weighing value is ≥ the target value – B Co-F Remain value, then turn off B fast filling.
5.B Free Fall	If the weighing value is ≥ the target value -B Free Fall value, then turn off B slow filling.
6. Start Zero Zone Value	Start filling only when the weight is greater than the starting zero zone value.
7.Tare Value	Used to calculate the tare range or tare according to the set tare value.
8.Tare Error Value	Tare range=Tare value ± Tare upper / lower limits.
9.COMP.Inhibit Timer(Co-F)	During this time, in order to avoid overshoot and not perform weight judgment, the fast filling is always effective. Initial value：**0.9**； Range：**0.0~99.9**.(Unit:**s**)
10.COMP.Inhibit Timer(Fi-F)	After the completion of the medium filling, in order to avoid overshoot and not perform weight judgment during this time, the slow filling is always effective.Initial value：**0.9**；Range：**0.0~99.9**。(unit:**s**)

5.Function Introduction

5.1Batch

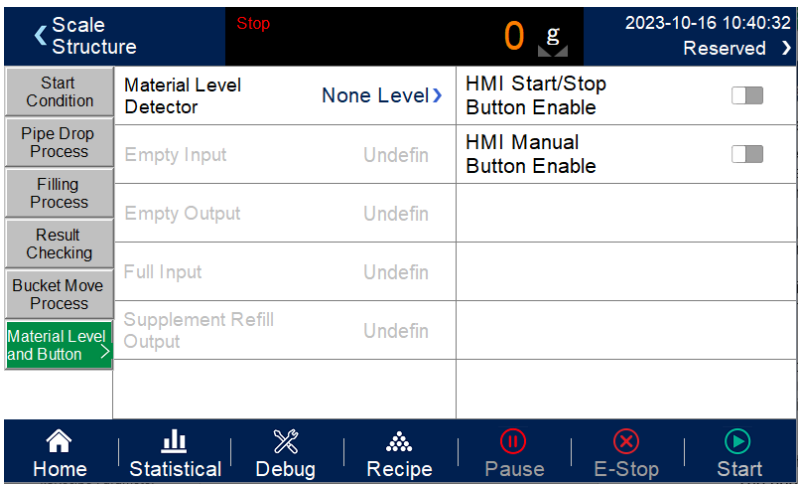
The batch number is used to remind the packaging number. During the automatic operation process, when the set batch number is completed, the controller sends an alarm and stops waiting for the user to process it. The batch number is reached and the alarm output is valid. At this time, in the batch completion alarm pop-up box, click the【Clear Alarm】 button or make the "Clear Alarm" input signal valid, and the instrument will clear the above alarms. If the batch count is set to 0, no batch count judgment will be performed.

Batch range:**0~9999**. Original Default:**0**（Do not perform batch count judgment）.



5.2 Material level control

Due to different application situations, the installation of material level devices in the packaging scale storage bin can be divided into two situations: double material level (upper and lower material levels), single material level (lower material level), and no material level device.



5.2.1 Double material level

Both the upper and lower material levels are defined, corresponding to the case of dual

material levels. At this point, the controller has a filling control function, and its control principle is: when both the upper and lower material level inputs are invalid, the instrument's filling output is effective (even if there is a shortage of material output); When the filling level input is valid, the filling output is invalid. At the same time, before each filling (fast, medium, and slow), the controller will detect whether the filling level is valid, and if it is invalid, wait for this signal; Only when this signal is valid can the filling process begin. During the filling process, the instrument does not detect whether the material level signal is valid.

5.2.2 Single material level

The unloading position is defined, but the loading position is not defined, corresponding to the situation of a single material position. At this time, the controller will not perform filling control. Just check the filling position before filling, and wait for this signal if the filling position is invalid; Only when this signal is valid can the filling process begin. During the filling process, the controller does not detect whether the material level signal is valid.

The upper and lower material levels have not been defined, corresponding to the situation where there is no material level device. At this time, the controller neither performs filling control nor detects the effectiveness of the filling position before filling.

5.3 Quick settings

Quickly modified recipe data is saved in real-time when stopped.

The data and formula parameters modified during operation are automatically updated when the next scale is started after exiting the quick setting interface (in combination mode, the target value of the next scale is only updated when the bag is loosened).

After modifying the formula parameters during operation, but before the next scale update, if the controller enters the stop state by inputting an emergency stop signal, the formula will be immediately updated.

During Modbus communication, the formula targert value can also be modified during runtime, but the formula number cannot be modified.

5.4 Leak detection function

Leakage detection supports two detection methods, which users can set according to their needs.：

1）Turn on the leak detection function. If it is set to【low limit of fast feeding flow】and not set to 0, it will be judged that if the current weight during fast feeding is less than or equal to the low limit of fast feeding flow multiplied by the fast feeding time, the alarm will be output and paused. It is necessary to manually input the clear alarm and input the start signal again to start feeding. Set to 0, invalid.

2）Turn on the leak detection function. If it is set to【Drop alarm weight】and not set to 0, and if the weight decreases by more than the drop alarm weight during filling, an alarm will be output and paused. It is necessary to manually input the clear alarm and input the start signal again to start filling. Set to 0, invalid.

5.5 Bucket collision protection function

Turn on the 【Pipe Drop Collision Barrel Protection Function】 and set the 【Pipe Drop Collision Barrel Protection Weight】.

In the running or stopped state, before the end of the unloading process, the real-time weight is detected minus the weight at the beginning of the unloading process. If it is greater than or equal to the 【 unloading protection weight 】, it is considered to have collided with the barrel. The alarm prompt will automatically clear after 3 seconds, and the unloading signal needs to be input again before starting the filling process.

6. COM Communication

GM9907-L6 can provide two serial communication interfaces, and both serial port 1 and serial port 2 can choose from three functions: continuous mode, Modbus mode, and printing mode. The first serial port of the controller is RS-232, and the second serial port of the controller is RS-485.

6.1 Printing Method

When the serial port parameter serial port 1 or serial port 2 is selected as the printing method, the corresponding serial port can be connected to a serial printer to achieve the printing of related accumulated content.

The communication parameters related to the printing method refer to the serial port parameters, among which the following should be noted：

1） **Baudrate**——The selection of this parameter should be consistent with the printer settings used for connection.

2） **Communication format**——The selection of this parameter should be consistent with the printer settings used for connection.
Note: When selecting Chinese as the printing language, the format with 7 data bits cannot be used, otherwise there may be errors in printing.

3） **Print Format**——The printing format can be set to 24 column or 32 column format through communication settings. Additionally, the printing language can be set to Chinese or English.

6.1.1 Automatic Printing

In printing mode, the automatic printing switch of the communication settings parameter is set to on. After each controller weighing is completed, the weighing result will be automatically printed in the following format：

The English 24 column print format is as follows：	**The English 32 column print format is as follows：**
Filling Detail Unit:**kg** Recipe ID: **20** Total ACUM PCS Result ---------- **1 5.50** **2 5.50**	Filling Detail Unit:**kg** Recipe ID: **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 status and click on 【Statistics】 in the main interface to enter the "Statistics" interface. Under the【Total Accumulation/Batch】 parameter, click on 【Data Processing】 and select "Print Total Accumulation" in the pop-up box. 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:**2020/12/02 15:45**	Total ACUM Report Time: **2020/12/02 13:36**

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PCS: **18**	PCS: **24**
Wt: **84.16kg**	Wt: **129.40kg**
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6.1.3 Formula Cumulative Printing

In the printing mode, stop the status and press【Statistics】 in the main interface to enter the "Statistics" interface. Under the【Formula Accumulation】 parameter, click【Data Processing】and select "Select Formula Printing" in the pop-up box to select the corresponding formula printing.

Select 'Print all formula accumulations' to print the accumulations of all formulas (1-20). The controller will automatically skip formulas with a target value of 0 and not print them. The format is as follows:

The English 24 column print format is as follows:	**The English 32 column print format is as follows:**
Recipe ACUM Report	Recipe ACUM Report
Time:**2020/12/02 15:53**	Time:**2020/12/02 15:53**
----------	----------
Recipe ID: **5**	Recipe ID: **5**
PCS: **2**	PCS: **2**
Wt: **19.27kg**	Wt: **19.27kg**
----------	----------

6.2 Modbus-RTU Protocol

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

6.2.1 Function codes and exception codes

◆ Function codes supported by the instrument:

Function code	Name	introduction
03	Read register	Read up to 125 registers at a time.
06	Write Single Register	Use this function code to write a single holding register.
10	Write multiple registers.	This command only supports writing dual registers in this controller. The address must be aligned during writing, and it is not allowed to only write a portion of the dual registers. It is allowed to read only a portion during reading.
01	Read coils	Note that this length is in bits.
05	Write coils	

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

◆ MODBUS exception code response

Code	Name	meaning
02	Illegal data address	For this controller, this error code represents that the received data address 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.

6.2.2 MODBUS MODE

The MODBUS transmission mode is RTU mode.

When communicating in RTU mode, every 8-bit byte in the message is divided into two 4-bit hexadecimal characters for transmission.

Data Format： 8-bit data bits, 1-bit stop bit, even parity (8-E-1)
8-bit data bits, 1-bit stop bit, no checksum (8-N-1)

Bautrate：**9600/19200/38400/57600/115200**(Choose any one)

Code：**RTU**

For example：

Read Command：

Command function (Single/Dual) Bytes	**Slave number**	**function code**	**data address**	**Number of read data**	**CRC verification code**	
Read weight (double)	**01**	**03**	**0002**	**0002**	**65**	**CB**
Target value (double)	**01**	**03**	**01F6**	**0002**	**25**	**C5**
Zero point voltage (dual)	**01**	**03**	**0069**	**0002**	**14**	**17**
Gain voltage (dual)	**01**	**03**	**006B**	**0002**	**B5**	**D7**

Write Command：

（Note：Taking 50 as an example, when writing weight data, 5000 should be written when displayed as two decimal places）

Command function (single/double) bytes	**Slave ID**	**Function Code**	**Data Address**	**Number of write registers**	**Write Bytes**	**Write data**	**CRC verification code**	
Write target value (double)	**01**	**10**	**01F6**	**0002**	**04**	**0000 1388**	**7C**	**07**
Zero calibration (dual)	**01**	**10**	**0069**	**0002**	**04**	**0000 0001**	**F4**	**2D**
Gain calibration (dual)	**01**	**10**	**006B**	**0002**	**04**	**0000 1388**	**B9**	**62**

6.2.3 MODBUS address allocation

PLC address	Protocol	Content	Introduction

	address			
40001~40002	0~1	A Gross Weight	Signed int	
40003~40004	2~3	A Net Weight	Signed int	
40005~40006	4~5	A Tare Weight	Signed int	
40007~40008	6~7	B Gross Weight	Signed int	
40009~40010	8~9	B Net Weight	Signed int	
40011~40012	10~11	BTare Weight	Signed int	
40013	12	A Weight Status 1	.0	Weight is stable
			.1	Zero
			.2	Weight flag +:0 -:1
			.3	Positive weight overflow
			.4	Negative weight overflow
			.5	Sensor positive overflow
			.6	Sensor negative overflow
			.7	Millivolt stability
			.8	Gross:0 Net:1
40014	13	A Weight Status 2	Reserve	Reserve
40015	14	B Weight Status 1	.0	Weight is stable
			.1	Zero
			.2	Weight flag +:0 -:1
			.3	Positive weight overflow
			.4	Negative weight overflow
			.5	Sensor positive overflow
			.6	Sensor negative overflow
			.7	Millivolt stability
			.8	Gross:0 Net:1
40016	15	B Weight Status 2	Reserve	Reserve
40017	16	AProcess Status 1	.0	Running
			.1	Co-Fi
			.2	Fi-Fi
			.3	Result Checking
			.4	Over
			.5	Under
			.6	Alarm
			.7	Bucket Move
			.8	Drop Pipe
			.9	Slow stop
			.10	Pipe Drop(electric)
			.11	Pipe Rise(electric)
			.12	Drop Pipe Done
			.13	Rise Pipe Done
			.14	Replenishing materials in progress
			.15	Start Zero Zone(The current weight is less than the effective

				starting zero zone)
40018	17	AProcess Status 2	.0	Pause
40019	18	BProcess Status 1	.0	Running
			.1	Co-Fi
			.2	Fi-Fi
			.3	Result Checking
			.4	Over
			.5	Under
			.6	Alarm
			.7	Bucket Move
			.8	Drop Pipe
			.9	Slow stop
			.10	Pipe Drop (electric)
			.11	Pipe Rise (electric)
			.12	Drop Pipe Done
			.13	Rise Pipe Done
			.14	Replenishing materials in progress
			.15	Start Zero Zone(The current weight is less than the effective starting zero zone)
40020	19	BProcess Status 2	.0	Pause
40021	20	Common Status 1	.0	Supplement Empty Level
			.1	Supplement Full Level
			.2	Material Supplement
			.3	Material shortage
			.4	Batch completion
			.5	Auxiliary logic output 1
			.6	Auxiliary logic output 2
			.7	Auxiliary logic output 3
			.8	Auxiliary logic output 4
			.9	Auxiliary logic output 5
			.10	Auxiliary logic output 6
40022	21	Common Status 2	Reserve	Reserve
40023	22	A Alarm Info1	.0	Unable to start with target value set to 0.
			.1	Weight overflow, unable to start.
			.2	The weight exceeds the reset range and cannot be reset.
			.3	The weight is unstable and cannot be reset.
			.4	Weight overflow, unable to reset.
			.5	Manual reset is not allowed during runtime
			.6	Excessive or insufficient filling results

			.7	The filling result is Over or Under, waiting for processing.
			.8	Batch completion.
			.9	Drop the Pipe and hit the bucket, alarm
			.10	Alarm for insufficient flow rate when Co-Filling
			.11	Weight drop alarm
			.12	Emergency stop signal is valid and cannot be started.
			.13	IO is in test status cannot be started.
			.14	Alarm for timeout during dropping the Pipe.
			.15	Alarm for timeout during raising the Pipe.
40024	23	A Alarm Info 2	Reserve	Reserve
40025	24	B Alarm Info 1	.0	Target value is 0, unable to start.
			.1	Weight Overflow
			.2	Weight beyond zero range, can't perform zero action.
			.3	Weight is not stable, can't perform zero action.
			.4	Weight overflow, unable to zero.
			.5	Manual Zero is not allowed during runtime
			.6	Excessive or insufficient filling results.
			.7	The filling result is over/under, waiting for processing.
			.8	Batch completion
			.9	Drop the Pipe and hit the Bucket, alarm
			.10	Alarm for insufficient flow rate when Co-Filling
			.11	Weight drop alarm
			.12	Emergency stop signal is valid and cannot be started
			.13	IO is in test status cannot be started.
			.14	Alarm for timeout of Drop the Pipe.
			.15	Alarm for timeout of Raise the Pipe.
40026	25	BAlarm Info2	Reserve	Reserve
40027~40028	26~27	Batch	0~50000	
40029~40030	28~29	Number of		

		completed batches	
40031~40032	30~31	AProcess status prompt	0 None 1 The device is in a stopped state, waiting to start.
40033~40034	32~33	BProcess status prompt	2 Wait for the input signal of the unloading position to be valid before starting filling. 3Waiting: The weight is greater than the starting zero zone value and stable. 4Waiting: Weight within the tare range and stable. 5Waiting: The weight is greater than the starting zero zone value. 6Waiting: Weight within the tare range. 7 Waiting for input of the firing signal. 8 Loading Pipe, waiting for loading to complete 。 9 Waiting for filling start signal input. 10 Fast feeding in progress. 11 Slow filling in progress. 12 Filling completed 13 Filling completed, wait for the weight to stabilize, record the results 。 14 Filling completed, please move the bucket away 。 15 Paused Start and continue running; Emergency Stop Entry Stop. 16 Waiting for batch completion 。 17 Perform over/under detection and ensure stable weight. 18 Suspension of over or under, clear alarm to continue operation. 19 Replenishing materials. 20 Time out for Drop the Pipe, continue or emergency stop processing after clearing the alarm. 21 Start filling after waiting for the delay before filling to end. 22 Delay before restarting 23 Perform drop correction, weight needs to be stable
40035~40038	34~37	Reserve	
40039~40040	38~39	A Last Result	
40041~40042	39~40	B Last Result	
40043~40046	42~45	Reserve	
Calibration			
40051	50	Unit	0：g；1：kg；2：t；3：lb
40052	51	Decimal	0~4
40053	52	Sensitity	Fixed read as 2：3mV/V

40054	53	Mini Division	1，2，5，10，20，50
40055~40056	54~55	Full Scale	Initial value:10.000；≤Mini Division×100000.
40057~40058	56~57	AZero Calibration with weight	Write 1 to perform zero calibration (Millivolt stability is required) Read to return absolute millivolts, default to 3 decimal points.
40059~40060	58~59	AGain Calibration with weight(Input Weight)	Write the current weight calibration gain. Read and return relative zero millivolts default to 3 decimal points
40061~40062	60~61	AZero Calibration Without Weight.	Write zero millivolts Read and return the current calibration zero millivolt, default to 3 decimal points
40063~40064	62~63	AGain Calibration without weight.（input millivolt）	No weight gain millivolts default to 3 decimal points.
40065~40066	64~65	AGain Calibration without weight(input weight)	The weight corresponding to millivolts without weight gain defaults to 3 decimal points.
40067~40070	66~70	Reserve	
40071~40072	70~71	BZero Calibration	Write 1 to perform zero calibration (requires stable millivolts), read and return absolute millivolts, default to 3 decimal points.
40073~40074	72~73	BGain Calibration With weight(intput weight)	Write the current weight, calibrate the gain, read and return the relative zero millivolt, default to 3 decimal points.
40075-40076	74-75	BZero Calibration without weight	Write zero millivolts Returns the default 3 decimal points for the current calibration zero millivolts.
40077-40078	76-77	BGain Calibration Without weight.	No weight gain millivolts default to 3 decimal points (input millivolts).
40079-40080	78-79	BGain Calibration Without Weight(Input weight)	The weight corresponding to millivolts without weight gain defaults to 3 decimal points.
40081~40084	80~83	Reserve	
40085	84	Calibration result information	0：no information
			1： The calibration range value is too small (the range is written as a value smaller than the division)
			2： The calibration range value is too large (the

			range writing is greater than the division) × Maximum range value)
			3： The zero voltage is too large to calibrate (write millivolts without weights greater than 15375)
			4： The zero voltage is too small to calibrate (write zero millivolts as 0)
			5： The signal is unstable and unable to calibrate the zero point (when the current weight is unstable, calibrate the zero point).
			6： The gain voltage is too large to calibrate (writing gain millivolts without weights is greater than the range of millivolts by 15.374)
			7： The gain voltage is too small to calibrate (write 0 millivolts without weight, write 1 gain weight without weight)
			8： The signal is unstable and the gain cannot be calibrated (when the current weight is unstable, the gain can be calibrated)
			9： Unreasonable weight input, unable to calibrate gain (write 0 for weight without weight gain or write a value greater than the full scale)
			10：Calibration accuracy is too high to calibrate (gain greater than 700000 parts)
			11：Zero calibration successfully
			12：Gain calibration successfully
System Parameters			
40091	90	Power-on Zero	On/Off is optional. When it is "on", the controller will automatically perform a reset operation when powered on (the weight inside the scale bucket meets the reset range). Initial value: Off.
40092	91	Zero Range	Initial value: 50; Range: 1-99 (percentage of full scale).
40093	92	Stable Range	During the stability judging time, the weight change range is within this set value, and the controller judges that the weighing platform is stable.Initial value：2；Range：0～99(d). Setting it to 0 means it is always stable.
40094	93	Stable Time	Initial value：0.3s；Range：0.1～9.9
40095	94	Zero Range	The weight value is within this range, and the controller will automatically reset to zero. If it is, zero point tracking will not be performed.Initial value：0；Range：0 ~ 9
40096	95	Zero Time	Initial value：2.0s；Range：0.1～99.9
40097	96	Digital Filter	AD digital filter level：7：no filter；9： The strongest filtering effect. Initial value：7.Range：0 ~ 9
40098	97	Vib-Filter	Optional on/off, performing secondary filtering

			on the basis of digital filtering. Initial value: Off.
40099	98	AD Sample Speed	A/D sample speed，120times/s、240times/s、480times/s、960times/s optional，initial value：480times/s.
Recipe Parameters			
40111	110	Recipe ID	Initial Value：1；Range：1-20
40112~40113	111~112	Target value	Target weight for filling.
40114~40115	113~114	ACo-Fill Remain	When the current weight is ≥ the target value – Co-Fill Remain, the Co-Fi ends and enters the Fi-Fi process.
40116~40117	115~116	A Free Fall	If Current weight≥Target value − Free Fall,End the Fi-Fi process and start waiting.
40118~40119	117~118	B Co-Fill Remain；dual Scale the parameter is vaild.	
40120~40121	119~120	B Free Fall；dual scale the parameter is valid	
40122~40123	121~122	Start Zero Zone Value	Start filling only when the weight is greater than the starting zero zone value.
40124~40125	123~124	Tare Value	Used to calculate the tare range or tare according to the set tare value.
40126~40127	125~126	Tare error value	Tare range=tare value±tare error value.
Process control parameters/filling start conditions			
40141	140	Pipe Drop function	0：Closed 1：Manual Drop Pipe (requires external input signal for Drop Pipe) 2：Automatically drop Pipe (meet the filling start conditions and automatically drop Pipe)
40142	141	A Drop/lift Pipe signal input port	Select the IO input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40143	142	BDrop /lift Pipe signal input port；dual scale the parameter is valid.	
40144	143	Filling start mode	0：Manual start filling (requires external input signal for filling start) Initial value:1：Automatically start filling (automatically start filling when the filling start conditions are met)
40145	144	AFilling start signal input port	Select the switch input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40146	145	BFilling start signal input port；Dual scales have this parameter	
40147	146	taring settings	0：No taring required 1：Peel according to actual weight (initial value) 2：Peel according to the set tare weight
40148	147	Starting conditions for filling	0：Greater than the starting zero value and stable 1：Consistent with the tare weight range and stable 2：Greater than the starting zero zone value does not require stability (tare according to actual weight, or not optional when automatically

			starting filling) 3：Consistent with the tare weight range without stability (not optional when taring according to actual weight)
40149	148	Tare range detection time	This parameter only exists when the tare range is met. When the weight is within the tare range and the duration exceeds this time, the current weight is considered to be within the tare range. Initial value：1.0；Range：0.0~99.9s
40150	149	Tare detection filter level	This parameter is only available when the tare range is met, the weight filtering level for tare detection. Initial value：3；range：0~9。
Process control parameters/Drop the Pipe function			
40171	170	Pipe Drop Control	Initial value:0：Air Drive,No Limit Switch 1：Air Drive With Low Limit 2：Motor Drive, Up Limit 3：Motor Drive, Up&Low Limit
40172	171	Pipe Drop Start Pre-Delay	Delay before starting the pipe drop process after meeting the pipe drop conditions, and start the pipe drop process after the time has expired.
40173	172	A.Pipe Drop Output(AirDrive)	Select the switch output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40174	173	B.Pipe Drop Output(AirDrive)； Dual scales have this parameters.	
40175	174	Pipe Drop Done Delay	After the delay is over, it is considered that the pipe drop action is over and the feeding can begin.Initial value：0.5；Range：0.0~99.9s
40176	175	Pipe Rise Start Pre-Delay	After the feeding is completed, delay this time before starting to rise the pipe.Initial value：0.5；Range：0.0~99.9s
40177	176	APipe Drop Done Signal Input Port	Select the input port corresponding to the function signal, where input port -0 represents that the function is not defined
40178	177	BPipe Drop Done Signal Input Port；Dual scales have this parameters.	
40179	178	Pipe Drop OverTime Timer	After the start of Pipe Drop, if the Pipe Drop signal is not effective after the specified time, an alarm will sound. Set to 0 to turn off alarm function.Initial value：4.0；Range：0.0~99.9s
40180	179	APipe Rise Done Signal Input Port	Select the input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40181	180	BPipe Rise Done Signal Input Port；Dual scales have this parameters.	
40182	181	Pipe Rise OverTime Alarm Time	After the start of rising the pipe, if the signal for Pipe Rise in place is not effective after this time, an alarm will sound. Set to 0 to turn off alarm function.Initial value：4.0；Range：0.0~99.9s

40183	182	AElectric Pipe Drop signal output port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40184	183	AElectric Pipe Rise signal output port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40185	184	BElectric Pipe Drop signal output port; Dual scales have this parameters.	
40186	185	BElectric Pipe Rise signal output port; Dual scales have this parameters.	
40187	186	Pipe Stuck Protect Function	After opening, if a Pipe Stuck is detected during the Pipe Drop process, the Pipe will be rised and an alarm will be given.Initial value:Close.
40188-40189	187-188	Weight For Check Pipe Stuck	Before the end of Pipe Drop, the real-time weight is detected minus the weight at the beginning of Pipe Drop. If the weight is greater than or equal to this, it is considered a Pipe Stuck.
Process Control Parameters/Filling Process			
40201	200	Intelligent automatic feeding control	After opening, after setting the target value and lead amount, the controller will automatically adjust the Coarse Flow Remains and Free Fall according to each feeding situation, achieving optimal speed and accuracy. Initial value: Close
40202	201	Automatic feeding speed adjustment	After the intelligent automatic feeding control switch is turned on, this function is available to set the feeding speed in the automatic feeding control mode. The smaller the value, the faster the speed, and the larger the value, the slower the speed.
40203	202	Positive Error Control	After this function is enabled, the controller will try to control the feeding error to a positive value as much as possible.Initial value:Close.
40204	203	Filling Start Pre-Delay	Delay time before the start of feeding. Initial value: 0.5; Range: 0.0~99.9s
40205	204	COMP Inbibit Timer(Co-F)	The prohibition time during the start of the fast feeding process, during which it is not necessary to determine whether the lead time has been reached. 0.0~99.9s
40206	205	COMP Inbibit Timer(Fi-F)	The prohibition time during the fast to slow feeding process, during which it is not necessary to determine whether the remain has been reached. 0.0~99.9s
40207	206	Result Checking Timer	Start the delay after the slow filling is completed, and after the delay ends, perform out of over/under detection, record the cumulative feeding results, and other processing. 0.0~99.9s

40208	207	Leaking Detect	Whether leakage is detected during the feeding process can be detected through two methods: fast flow rate and falling.
40209~40210	208~209	Co-F Flowrate Low Limit	During the fast feeding process, if the flow rate is lower than the set value, it is considered as material leakage, and an alarm will prompt and enter a pause state.
40211~40212	210~211	Weight Sudden Drop Alarm	If the weight reduction during feeding is greater than the weight of the drop alarm, an alarm will be output and suspended. It is necessary to manually input the clear alarm and input the start signal again to start feeding.
40213	212	Filling Signal Output Type	Combination ： Both fast and slow flow are effective during fast flow； Individual： During fast flow, only the fast flow output is valid.
40214	213	ACoarse Fill Output	Select the output port corresponding to the function signal, where output port -0 represents that the function is not define.
40215	214	AFine Fill Signal Output Port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40216	215	BCoarse Fill Signal Output Port； Dual scales have this parameters.	
40217	216	BFine Signal Output Port;Dual scales have this parameters.	
40218	217	Filling Filter Level	Set the filtering level during the feeding process.
40219~40220	218~219	Filling Threshold Value	If the weight during the feeding process is greater than or equal to the set value, the IO feeding threshold output is valid.
Process Control Parameter/Waiting Over			
40231	230	Wait Stable For Result Checking	Is it necessary to judge whether the weight is stable before proceeding to the next process after the holding time of the fixed value has ended.
40232	231	Over/Under Detection	After opening, it will be forced to stabilize, and after stabilizing, check whether the weighing result is over or under.
40233~40234	232~233	Over Value	When the weighing result is greater than the target value+Over value, it is considered over.
40235~40236	234~235	Under Value	When the weighing result is less than the target value - under, it is considered under.
40237	236	Over/Under Pause	When opened, if there is an over or under situation, the controller will alarm and wait for processing. After clearing the alarm, it can continue to operate.
40238	237	Over/Under Alarm Timer	Set the duration of the over/under alarm signal.
40239	238	AOver/Under Alarm Output	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40240	239	BOver/Under	

		Alarm Output	
40241	240	UnderLimit Compensation	When there is a shortage after opening, the replenishment function will be activated first, and after the replenishment is completed, it will be judged again that the shortage is exceede.
40242	241	Compensation Max Times	If there is still a shortage after the replenishment exceeds this number, the replenishment process will be forced to end.
40243	242	Compensation Fill-On Timer	Effective time of slow flow signal output during one replenishmen. 0.1~99.9s
40244	243	Compensation Fill-OFF Timer	The invalid duration after the slow flow signal output is effective when replenishing the material once.0.0~99.9s
40245	244	Auto Free Fall Correction	After the drop correction function is turned on, it will be forced to stabilize. After stabilizing, the weighing result will be recorded and the drop value will be automatically corrected.
40246	245	Correction Numbers	How many consecutive weighing results are collected for correction calculation.
40247	246	Correction Effective Range	Error in weighing results ≤ target value * The range of drop correction will only be used for the calculation of drop correction in this weighing result.
40248	247	Correction Percentage	After calculating the drop correction, the correction value is obtained, multiplied by this amplitude and corrected to the drop value.
Process Control Parameters/Bucket Move Process			
40261	260	ABucket Move Output	Select the output port corresponding to the function signal, where output port -0 represents that the function is not define.
40262	261	BBucket Move Output; Dual scales have this parameter.	
40263	262	Weight Range For Bucket Move	If the weight value is lower than the judgment range for moving the bucket, it is considered that the bucket has been moved and the delay in moving the bucket begin.
40264	263	Bucket Move Delay Timer	The entire process is considered to have ended after the delay in moving the bucket has ended.
40265	264	Start Pre-Delay Again	The delay time from the end of bucket mode to the start of the next feeding process. After this time, it is determined whether the batch has completed and whether the filling process has been completed.
40266	265	Bucket Move Filter Level	The higher the filtering level during the bucket move process, the better the filtering effect.
Proces Control Parameters/Material Level Control			
40281	280	Material Level Detector	Set the number of level devices for the equipment feeding device.
40282	281	Empty Input; This parameter is only available when setting	

		single/double material levels	
40283	282	Empty Output; This parameter is only available when setting single/double material levels.	
40284	283	Full Input; This parameter is only available when setting dual material levels.	
40285	284	Supplement Refill Output; This parameter is only available when setting dual material levels.	
Auxiliary logic program function 1			
40301	300	type	Select the type of auxiliary logic programming signal based on the logic to be implemented.
40302	301	trigger signal	Optional custom trigger input function signal, fixed input port, or an internal function signal.
40303	302	Trigger Input signal port	Select the input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40304	303	Trigger Output signal port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40305	304	Delay on time	After the trigger signal is effective, the logic output signal is only effective after a delay of this time.0.0~99.9s
40306	305	Delay off time	After the trigger signal becomes invalid, the logic output signal becomes invalid after a delay of this time. 0.0~99.9s
40307	306	Signal output effective time	The duration after the logic output signal is valid, which becomes invalid after the end of this time. 0.0~99.9s
40308	307	Signal And/Or Signal	The AND/OR relationship between trigger signal and trigger signal 2.
40309	308	Trigger Signal 2	Optional custom trigger input function signal, fixed input port, or an internal function signal.
Auxiliary logic program function 2			
40321	320	Type	Select the type of auxiliary logic programming signal based on the logic to be implemented.
40322	321	Trigger signal	Optional custom trigger input function signal, fixed input port, or an internal function signal.
40323	322	Trigger input signal port	Select the input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40324	323	Trigger Output Signal Port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40325	324	Delay on time	After the trigger signal is effective, the logic output signal is only effective after a delay of this time.0.0~99.9s
40326	325	Delay off time	After the trigger signal becomes invalid, the logic output signal becomes invalid after a delay of this time. 0.0~99.9s

40327	326	Signal output effective time	The duration after the logic output signal is valid, which becomes invalid after the end of this time.0.0~99.9s
40328	327	Signal And/Or Signal	The AND/OR relationship between trigger signal and trigger signal 2
40329	328	Trigger Signal 2	Optional custom trigger input function signal, fixed input port, or an internal function signal
Auxiliary logic program function 3			
40341	340	type	Select the type of auxiliary logic programming signal based on the logic to be implemented.
40342	341	Trigget Signal	Optional custom trigger input function signal, fixed input port, or an internal function signal.
40343	342	Trigger Input Signal Port	Select the input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40344	343	Trigger Output Signal Port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40345	344	Delay ON Timer	After the trigger signal is effective, the logic output signal is only effective after a delay of this time.0.0~99.9s
40346	345	Delay OFF Timer	After the trigger signal becomes invalid, the logic output signal becomes invalid after a delay of this time. 0.0~99.9s
40347	346	Signal Output effective timer	The duration after the logic output signal is valid, which becomes invalid after the end of this time. 0.0~99.9s
40348	347	Signal And/Or Signal	The AND/OR relationship between trigger signal and trigger signal 2.
40349	348	Trigger Signal 2	Optional custom trigger input function signal, fixed input port, or an internal function signal.
Auxiliary logic program function 4			
40361	360	Type	Select the type of auxiliary logic programming signal based on the logic to be implemented.
40362	361	Trigger Siganal	Optional custom trigger input function signal, fixed input port, or an internal function signal.
40363	362	Trigger Input Signal Port	Select the input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40364	363	Trigger Output Signal Port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40365	364	Delay ON Timer	After the trigger signal is effective, the logic output signal is only effective after a delay of this time.0.0~99.9s
40366	365	Delay OFF Timer	After the trigger signal becomes invalid, the logic output signal becomes invalid after a delay of this time. 0.0~99.9s

40367	366	Signal Output effective timer	The duration after the logic output signal is valid, which becomes invalid after the end of this time. 0.0~99.9s
40368	367	Signal And/Or Signal	The AND/OR relationship between trigger signal and trigger signal 2.
40369	368	Trigger Signal 2	Optional custom trigger input function signal, fixed input port, or an internal function signal.
Auxiliary logic program function 5			
40381	380	type	Select the type of auxiliary logic programming signal based on the logic to be implemented.
40382	381	Trigger Siganal	Optional custom trigger input function signal, fixed input port, or an internal function signal.
40383	382	Trigger Input Signal Port	Select the input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40384	383	Trigger Output Signal Port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40385	384	Delay ON Timer	After the trigger signal is effective, the logic output signal is only effective after a delay of this time.0.0~99.9s
40386	385	Delay OFF Timer	After the trigger signal becomes invalid, the logic output signal becomes invalid after a delay of this time. 0.0~99.9s
40387	386	Signal Output effective timer	The duration after the logic output signal is valid, which becomes invalid after the end of this time. 0.0~99.9s
40388	387	Signal And/Or Signal	The AND/OR relationship between trigger signal and trigger signal 2.
40389	388	Trigger Signal 2	Optional custom trigger input function signal, fixed input port, or an internal function signal.
Auxiliary logic program function 6			
40401	400	Type	Select the type of auxiliary logic programming signal based on the logic to be implemented.
40402	401	Trigger Siganal	Optional custom trigger input function signal, fixed input port, or an internal function signal.
40403	402	Trigger Input Signal Port	Select the input port corresponding to the function signal, where input port -0 represents that the function is not defined.
40404	403	Trigger Output Signal Port	Select the output port corresponding to the function signal, where output port -0 represents that the function is not defined.
40405	404	Delay ON Timer	After the trigger signal is effective, the logic output signal is only effective after a delay of this time.0.0~99.9s
40406	405	Delay OFF Timer	After the trigger signal becomes invalid, the logic output signal becomes invalid after a delay of this time. 0.0~99.9s

40407	406	Signal Output effective timer	The duration after the logic output signal is valid, which becomes invalid after the end of this time. 0.0~99.9s
40408	407	Signal And/Or Signal	The AND/OR relationship between trigger signal and trigger signal 2.
40409	408	Trigger Signal 2	Optional custom trigger input function signal, fixed input port, or an internal function signal.
IO Module			
40421	420	IN1	Input customization
40422	421	IN2	
40423	422	IN3	
40424	423	IN4	
40425	424	IN5	
40426	425	IN6	
40427	426	IN7	
40428	427	IN8	
40429	428	IN9	
40430	429	IN10	
40431	430	IN11	
40432	431	IN12	
40433	432	OUT1	output customization
40434	433	OUT2	
40435	434	OUT3	
40436	435	OUT4	
40437	436	OUT5	
40438	437	OUT6	
40439	438	OUT7	
40440	439	OUT8	
40441	440	OUT9	
40442	441	OUT10	
40443	442	OUT11	
40444	443	OUT12	
40445	444	OUT13	
40446	445	OUT14	
40447	446	OUT15	
40448	447	OUT16	
40449	448	IOTest	0：end testing；Not 0：start testing
40450	449	Input test（Read only）	The. 0~. 11 bits respectively represent the input status of IN1~IN12
40451	450	Output test	Bits. 0~. 15 respectively represent the output status of OUT1~OUT16
40452	451	Start	Read：1 Running status。0：not running status.
40453	452	E-Stop	Read：1Stop Status.0：Not stop status
40454	453	Stop	Read：1 Slow stop effective (stop after filling).0: Slow stop ineffective
40455	454	Pause	Read：1 : Pause valid. 0:Pause invalid.

40456	455	A Zeroing	Read return 0.
40457	456	B Zeroing	Read return 0.
40458	457	Clear Alarm	Read return 0.
40459	458	Change Recipe	Read return 0.
40460	459	A Pipe Drop/Rise	Read return 0.
40461	460	A Manual Coarse Fill	Read：1Coarse fill is valid. 0: Coarse fill is invalid
40462	461	A Manual Fine Fill	Read：1:valid. 0:invaid.
40463	462	A StartFilling	Read：1 The feeding start signal is valid. 0: Invalid feeding start signal
40464	463	B Pipe Drop/Rise	Read return 0.
40465	464	B Manual Coarse Fill	Read：1:valid. 0:invalid.
40466	465	B Mannual Fine Fill	Read：1:valid. 0:invalid.
40467	466	B StartFilling	Read：1 The feeding start signal is valid. 0: Invalid feeding start signal
40468	467	Clear ALL ACUM	Read return 0.
40469	468	Clear Total ACUM	Read return 0.
40470	469	Clear Current Recipe ACUM	Read return 0.
40471	470	Clear All Recipe ACUM	Read return 0.
40472	471	Clear Current User ACUM	Read return 0.
40473	472	Clear All User ACUM	Read return 0.
40474	473	Manually run once	Read：1:running status. 0:not running status.
40475	474	AStart	Read：1:run status. 0:not running status,
40476	475	A E-Stop	Read：1:stop status.0:not stop status.
40477	476	A Stop	Read：1 Slow stop effective (stop after filling).0:Slow stop ineffective.
40478	477	A Pause	Read：1:Pause is valid. 0:pause is invalid,
40479	478	B Start	Read：1:run status.0:not running status.
40480	479	B E-Stop	Read：1:stop status. 0:not stop status.
40481	480	B Stop	Read：1 Slow stop effective (stop after filling). 0:Slow stop ineffective,
40482	481	B Pause	Read：1 pause is valid. 0pause is invalid.
40483~40485	482~484	Reserve	Reserve
System related			
40501~40502	500~501	Version Number	4 bytes, unsigned number, if converted to a decimal value of 10000, it is 01.00.00

40503~40504	502~503	Compiled date	4 bytes, unsigned number, if converted to decimal value of 150611, it is June 11, 2015
40505~40506	504~505	Compiled time	4 bytes, unsigned number, if converted to decimal value 150611, it is 15:06:11
40507	506	Current User	Writing from the front end to the back end The backend is used to determine the cumulative data stored for the corresponding user.
40508	507	Reset Parameters	Read：0 Write： 8800：Reset all parameters（including calibration parameters） 8801：Reset all parameters（Excluding calibration parameters） 8802：Reset recipe parameters 8803：Reset system and communication parameters 8804：Reset calibration parameters 8805：Reset process control parameters 8806：Reset auxiliary logic programming 8807：Reset IO parameter 8808：Reset intelligent automatic feeding data
40509	508	Backup Parameters	Read： 0：There are currently no backup parameters available 1：There are currently backup parameters available. Write： 8800：Perform parameter backups (including recipe parameters, system and communication parameters, process control parameters, auxiliary logic programming, and IO parameters) 8801：Restore backup parameters 8802：Delete backup parameters
40510~40511	509~510	Backed up parameter date	Read only, 4 bytes, unsigned number. If converted to decimal value 150611, it is June 11, 2015
40512~40513	511~512	Backed up parameter time	Read only, 4 bytes, unsigned number, if converted to decimal value 150611, it will be 15:06:11
Recipe Target Value（Read Only）			
40521~40522	520~521	Target Value（Recipe 1）	
40523~40524	522~523	Target Value（Recipe 2）	
40525~40526	524~525	Target Value（Recipe 3）	
40527~40528	526~527	Target Value（Recipe 4）	

40529~40530	528~529	Target Value (Recipe 5)	
40531~40532	530~531	Target Value (Recipe 6)	
40533~40534	532~533	Target Value (Recipe 7)	
40535~40536	534~535	Target Value (Recipe 8)	
40537~40538	536~537	Target Value (Recipe 9)	
40539~40540	538~539	Target Value (Recipe 10)	
40541~40542	540~541	Target Value (Recipe 11)	
40543~40544	542~543	Target Value (Recipe 12)	
40545~40546	544~545	Target Value (Recipe 13)	
40547~40548	546~547	Target Value (Recipe 14)	
40549~40550	548~549	Target Value (Recipe 15)	
40551~40552	550~551	Target Value (Recipe 16)	
40553~40554	552~553	Target Value (Recipe 17)	
40555~40556	554~555	Target Value (Recipe 18)	
40557~40558	556~557	Target Value (Recipe 19)	
40559~40560	558~559	Target Value (Recipe 20)	
Accumulated date			
40601	600	Clear Total ACUM	Write 0 to clear all cumulative data, including total cumulative recipe cumulative user ACUM. Write 1 to clear the total cumulative data Read as 0
40602	601	Clear Recipe ACUM	Write 1~20 to clear the corresponding formula 1~20 cumulative data. Write 100 to clear the cumulative data of the current recipe. Write 101 to clear all formula cumulative data. Read as 0
40603	602	Clear User ACUM	Write 0-9 to clear corresponding user cumulative data. Write 100 to clear the accumulated data of the current user Write 101 to clear cumulative data for all users

		Read as 0	
40604~40605	603~604	Total ACUM PCS	Read only
40606~40607	605~606	Total ACUM WT(High 6 digits)	
40608~40609	607~608	Total ACUM WT(Low 9 digits)	
40610~40611	609~610	ACUM PCS Recipe1	
40612~40613	611~612	ACUM WT(High 6 digit)Recipe 1	
40614~40615	613~614	ACUM WT(Low 9 digit)Recipe 1	
40616~40617	615~616	ACUM PCS Recipe2	
40618~40619	617~618	ACUM WT (High 6 digit)Recipe 2	
40620~40621	619~620	ACUM WT (Low 9 digit) Recipe 2	
40622~40623	621~622	ACUM PCS Recipe 3	
40624~40625	623~624	ACUM WT(High 6 digit)Recipe 3	
40626~40627	625~626	ACUM WT(Low 9digit)Recipe3	
40628~40629	627~628	ACUM PCS Recipe 4	
40630~40631	629~630	ACUM WT(High 6 digit)Recipe 4	
40632~40633	631~632	ACUM WT(Low 9 digit)Recipe 4	
40634~40635	633~634	ACUM PCS Recipe5	
40636~40637	635~636	ACUM WT(High 6 digit)Recipe 5	
40638~40639	637~638	ACUM WT(Low 9 digit)Recipe 5	
40640~40641	639~640	ACUM PCS Recipe 6	
40642~40643	641~642	ACUM WT(High 6 digit)Recipe 6	
40644~40645	643~644	ACUM WT(Low 9 digit)Recipe6	
40646~40647	645~646	ACUM PCS Recipe 7	
40648~40649	647~648	ACUM WT(High 6 digit)Recipe 7	
40650~40651	649~650	ACUM WT(Low 9 digit)Recipe 7	
40652~40653	651~652	ACUM PCS Recipe 8	
40654~40655	653~654	ACUM WT(High 6 digit)Recipe 8	
40656~40657	655~656	ACUM WT(Low 9 digit)Recipe 8	
40658~40659	657~658	ACUM PCS Recipe 9	
40660~40661	659~660	ACUM WT(high 6 digit)Recipe 9	
40662~40663	661~662	ACUM WT(low 9 digit)Recipe 9	
40664~40665	663~664	ACUM PCS Recipe 10	
40666~40667	665~666	ACUM WT(high 6 digit)Recipe 10	
40668~40669	667~668	ACUM WT(low 9 digit)Recipe 10	
40670~40671	669~670	ACUM PCS Recipe 11	
40672~40673	671~672	ACUM WT(high 6 digit)Recipe 11	
40674~40675	673~674	ACUM WT(low 9 digit)Recipe 11	
40676~40677	675~676	ACUM PCS Recipe 12	
40678~40679	677~678	ACUM WT(high 6 digit)recipe12	
40680~40681	679~680	ACUM WT(low 9 digit)Recipe 12	
40682~40683	681~682	ACUM PCS Recipe 13	
40684~40685	683~684	ACUM WT(high 6 digit)Recipe 13	
40686~40687	685~686	ACUM WT(low 9 digit)Recipe13	
40688~40689	687~688	ACUM PCS Recipe 14	
40690~40691	689~690	ACUM WT(High 6 digit)Recipe 14	

40692~40693	691~692	ACUM WT(Low 9 digit)Recipe 14	
40694~40695	693~694	ACUM PCS Recipe 15	
40696~40697	695~696	ACUM PCS(high 6 digit)Recipe 15	
40698~40699	697~698	ACUM WT(low 9 digit)Recipe 15	
40700~40701	699~700	ACUM PCS Recipe 16	
40702~40703	701~702	ACUM WT(High 6 digit)Recipe 16	
40704~40705	703~704	ACUM WT(low 9 digit)Recipe16	
40706~40707	705~706	ACUM PCS Recipe 17	
40708~40709	707~708	ACUM WT(High 6 digit)Recipe 17	
40710~40711	709~710	ACUM WT(low 9 digit)recipe 17	
40712~40713	711~712	ACUM PCS Recipe18	
40714~40715	713~714	ACUM WT(High 6 digit)Recipe 18	
40716~40717	715~716	ACUM WT(Low 9 digit)Recipe 18	
40718~40719	717~718	ACUM PCS Recipe 19	
40720~40721	719~720	ACUM WT(high 6 digit)Recipe 19	
40722~40723	721~722	ACUM WT(low 9 digit)Recipe 19	
40724~40725	723~724	ACUM PCS Recipe 20	
40726~40727	725~726	ACUM WT(High 6 digit)Recipe 20	
40728~40729	727~728	ACUM WT(low 9 digit)Recipe20	
40730~40731	729~730	ACUM PCS User 0	
40732~40733	731~732	ACUM WT(high 6 digit)User 0	
40734~40735	733~734	ACUM WT(low 9digit)User 0	
40736~40737	735~736	ACUM PCS User 1	
40738~40739	737~738	ACUM WT(high 6 digit)User 1	
40740~40741	739~740	ACUM WT(low 9 digit)User1	
40742~40743	741~742	ACUM PCS User 2	
40744~40745	743~744	ACUM WT(high 6 digit)User2	
40746~40747	745~746	ACUM WT(low 9 digit)User 2	
40748~40749	747~748	ACUM PCS User 3	
40750~40751	749~750	ACUM WT(high 6 digit)User 3	
40752~40753	751~752	ACUM WT(low 9 digit)User 3	
40754~40755	753~754	ACUM PCS User 4	
40756~40757	755~756	ACUM WT(High 6 digit)User 4	
40758~40759	757~758	ACUM WT(low 9 digit)User4	
40760~40761	759~760	ACUM PCS User 5	
40762~40763	761~762	ACUM WT(high 6 digit)User5	
40764~40765	763~764	ACUM WT(low 9 digit)User 5	
40766~40767	765~766	ACUM PCS User 6	
40768~40769	767~768	ACUM WT(high 6 digit)User 6	
40770~40771	769~770	ACUM WT(low 9 digit)User6	
40772~40773	771~772	ACUM PCS User 7	
40774~40775	773~774	ACUM WT(High 6 digit)User 7	
40776~40777	775~776	ACUM WT(low 9 digit)User7	
40778~40779	777~778	ACUM PCS User 8	
40780~40781	779~780	ACUM WT(high 6 digit)User 8	

40782~40783	781~782	ACUM WT(low 9 digit)User 8	
40784~40785	783~784	ACUM PCS User 9	
40786~40787	785~786	ACUM WT(High 6 digit)User 9	
40788~40789	787~788	ACUM WT(Low 9 digit)User 9	
40801~40802	800~801	AResult flag，+1 for every completion	
40803~40804	802~803	A Coarse fill time (ms)	
40805~40806	804~805	A Fine fill time (ms)	
40807~40808	806~807	A Waiting time(ms)	
40809~40810	808~809	A DISC time(ms)	
40811~40812	810~811	A One scale time ms from the start of feeding delay to the end of discharging.	
40813~40814	812~813	A This result	
40815~40816	814~815	A Target value	
40817~40818	816~817	A Coarse Flow Remains	
40819~40820	818~819	A Fine Flow Remains	
40821~40822	820~821	A COMP Inhibit Timer(Co-F)	
40823~40824	822~823	A COMP Inhibit Timer(Fi-F)	
40825~40826	824~825	A Deadline forecast for Coarse filling	
40827~40828	826~827	A Current Tare weight	
40829~40830	828~829	A Current Gross Weight	
40831~40850	830~849	Reserve	
40851~40852	850~851	B Result flag,+1 for each completion	
40853~40854	852~853	B Coarse fill time(ms)	
40855~40856	854~855	B Fine fill time(ms)	
40857~40858	856~857	B Waiting time(ms)	
40859~40860	858~859	B Discharging Time(ms)	
40861~40862	860~861	B One scale time ms from the start of feeding delay to the end of discharging.	
40863~40864	862~863	B Current Result	
40865~40866	864~865	B Target value	
40867~40868	866~867	B Coarse Flow Remains	
40869~40870	868~869	B Fine Flow Remains	
40871~40872	870~871	B COMP Inhibit Timer(Co-F)	
40873~40874	872~873	B COMP Inhibit Timer(Fi-F)	
40875~40876	874~875	B Deadline forecast for Coarse filling	
40877~40878	876~877	B Current Tare weight	
40879~40880	878~879	B Current Gross Weight	
40881~40900	880~899	Rerserve	
Internal use of communication parameter items （Read Only）			
40901	900	COM 1Slave ID	1~99
40902	901	COM 1 Communication Protocol	0：modbus;1：Printing
40903	902	COM 1 Baudrate	0：:9600；1：19200；2：38400 3：57600；4：115200

40904	903	COM 1 Data Format	0：8E1；1：8N1；2：7E1；3：7N1
40905	904	COM 1 High and low bytes	0： High Byte First；1：Low Byte First
40906	905	COM 2 Slave ID	1~99
40907	906	COM 2 Communication Protocol	0：modbus；1：Printing
40908	907	COM 2 Baudrate	0：:9600；1：19200；2：38400 3：57600；4：115200
40909	908	COM 2 Data format	0：8E1；1：8N1；2：7E1；3：7N1
40910	909	COM 2 High and low bytes	0： High Byte First；1： Low Byte First
Printing Parameter（ Readable and writable ）			
40941	940	Print Format	0：Column 24；1：Column 32
40942	941	Print Language	0：Chinese；1：English
40943	942	Print Line Nos.	0~9
40944	943	Automatically print weighing results	0~1
40945	944	Reserve	
40946	945	Total cumulative data printing	Write 1：Total cumulative data printing
40947	946	Recipe ACUM Report Printing	Write 1~20：Print the corresponding 1~20 Recipe ACUM. Write 100： Print current recipe ACUM Write 101： Print all recipe ACUMs（ Do not print formulas with cumulative data of 0）
40948	947	User ACUM Report printing	Write 0~9:Print corresponding cumulative users from 0 to 9 Write 100： Print current user ACUM Write 101： Print ACUM data for all users (do not print users with cumulative data of 0)
41101	1100	High and low bytes	
41102	1101	PORT	
41103~41106	1102~1105	IP	
41107~41112	1106~1111	MAC	
Coil/IO test			
1	0	IO Test Switch	Enter the IO test when writing 1; Write 0 to exit. Not writable at runtime
2	1	Port IN1 test	Not effective on write. Read：1=valid； 0=invaid
3	2	Port IN2 test	
4	3	Port IN3 test	
5	4	Port IN4 test	
6	5	Port IN5 test	
7	6	Port IN6 test	

8	7	Port IN7 test	
9	8	Port IN8 test	
10	9	Port IN9 test	
11	10	Port IN10 test	
12	11	Port IN11 test	
13	12	Port IN12 test	
14	13	Port OUT1 test	
15	14	Port OUT2 test	
16	15	Port OUT3 test	
17	16	Port OUT4 test	
18	17	Port OUT5 test	
19	18	Port OUT6 test	
20	19	Port OUT7 test	Write： 1= （valid）
21	20	Port OUT8 test	0= （invalid）
22	21	Port OUT9 test	
23	22	Port OUT10test	Read： 1= （valid）
24	23	Port OUT11test	0= （invalid）
25	24	Port OUT12test	
26	25	Port OUT13test	
27	26	Port OUT14test	
28	27	Port OUT15test	
29	28	Port OUT16test	
30	29	Port OUT17test	
31-32	30-31	Reserve	

Calibration principle：

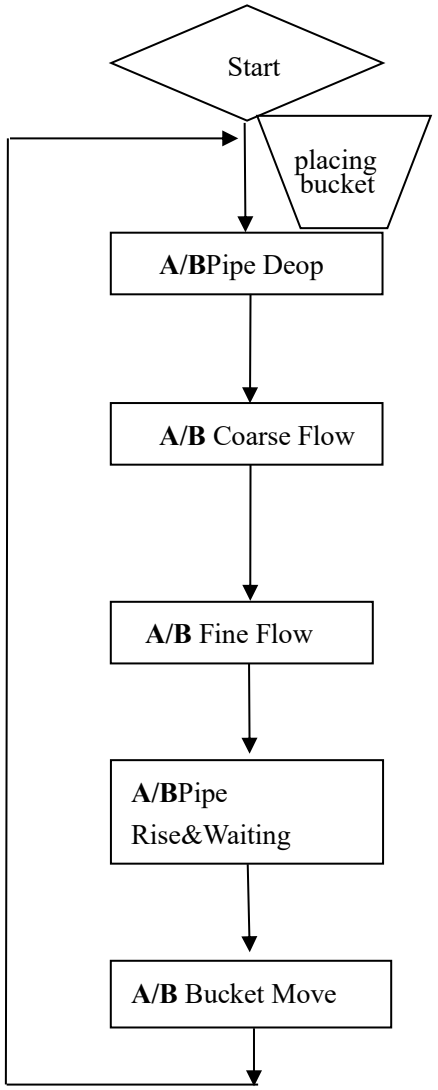
Zero Calibration： Zero point calibration can be performed using modbus (40106 and 40107) addresses. (If zero point calibration is skipped and no weight gain calibration is performed directly, the last recorded zero point will be used as the current zero point calibration).

Gain calibration： The gain millivolts is the input sensor power multiplied by the sensor sensitivity, and the gain weight is the maximum range of the sensor. The gain millivolts and gain weight used for gain calibration here refer to the following calibration method.

7. Automatic filling process

GM9907-L6 The filling controller can automatically control all filling processes such as fast, slow feeding, and bucket movement in the automatic filling state. It can be set according to section 4.9 "Process parameters".

Process Description:



1）Determine the material level situation；**2**）placing bucket；**3**）Satisfy feeding start conditions；**4**）Determine if there is a pipe drop function；**5**）Determine the feeding start method；**6**）When the feeding start conditions are met, perform a tare action；**7**）Activate 'Filling Start Pre-Delay'；

1）start "**A/B** COMP Inhibit Timer(Co-F)"，Do not judge weight during this period；

2）Judging weight：When the material weight is greater than or equal to the target value of a single scale - A/B coarse flow Remains, turn off the fast Fill and enter the slow fill。

3）If the leak detection function is turned on, leak detection will be performed during the feeding process.

1）If there is a pipe drop function, the pipe will be rised after the feeding is completed and a fixed value will be output. After the holding time of the fixed value ends, the barrel will be moved.

※When the external "start" input signal is valid in the stopped state, the L6 starts to detect whether the target value has been set. If the setting is completed, it will run normally, otherwise it will prompt the message "Target weight is unreasonable" and cannot be started. When A scale is working, use the parameters of A scale, and when B scale is working, use the parameters of B scale.

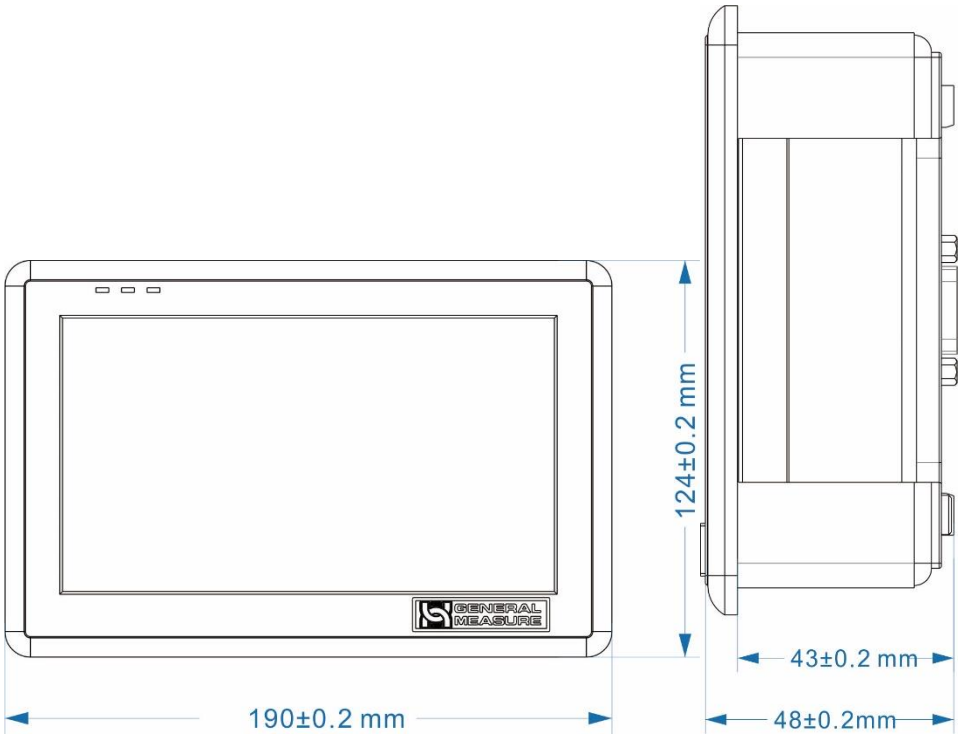
※Over/Under Detection：

When the "Over/Under Detection Switch" is turned on, during a filling process, when the weighing process of one scale is completed, the system performs over detection after the holding time of the fixed value has ended. After the weight stabilizes, an over/under alarm

signal is output

The over/under pause switch is "on". If there is an over or under during this filling, the L6 will pause the automatic Resulting process, the buzzer will sound, and an error message "A/B under pause" will be displayed above the weight, waiting for the user to process. At this time, the "clear alarm" button can be pressed to input the switch value "clear alarm" to effectively clear the alarm signal. The L6 will clear the above alarm and continue to operate. Users can also input an emergency stop signal to return to the stop state.

8. Dimension (mm)



Hole size