GENERAL MEASURE

杰 • 曼 • 科 • 技

AF-100K
User Manual

Ver A0

Due to the continuous improvement and update of our products, our company reserves the right to modify this manual at any time without prior notice. To this end, please visit the company's website frequently for timely information.

The company's Web address **http://www.szgmt.com**

Implementation standard of this product: **GB/T 7724-2008**

Content

1. Overview

AF-100K is an automatic feeding unit suitable for fixed target weight packaging of granular materials. The feeding mechanism adopts the way of motor control to achieve two-speed feeding, manually assisted bagging and fast bag loosening. The product has the characteristics of high speed, high precision and wide range, and can be widely used in food, feed, chemical, rubber and plastic industries of fixed target weight packaging machinery.

1.1 Product parameters, functions and characteristics

Type Specification	AF-100K
Power Supply	AC220V±10%, 50/60Hz, 1KW
Weighing Range	5 to 100kg
Weighing Accuracy	±25g
Weighing Speed	≥600pcs/hour
Working temperature	0 to 40ºC
Maximum Humidity	90% R.H non-condensation
Air source	0.4 to 0.6MPa 2m³/h

Note: Packaging accuracy and speed will fluctuate depending on material, supply Material speed and other environmental factors. The accuracy and speed are the test data of round grain rice used in our company‘s test line.

1.2 Product Functions

1.Weighing type automatic feeding function.

2. Two speed (servo motor feeding, digital adjustment, automatic adjustment)

3. Automatic zero function.

4. Process control parameter, automatic correction function.

5. Cumulative and statistical functions.

1.3 Product Features

1. Intelligent: only need to set the target value, in the case of ensuring accuracy, automatically adjust and obtain the optimal feeding speed.

2. Simple installation: standard external interface flange, easy installation.

3. Data export: with USB interface, export data record more convenient.

4. Simple operation: 7 inch touch screen, Support Chinese and English display.

5. Material: The contact material part is made of 304 stainless steel.

6. High speed, high precision: servo motor feeding, both fast and accurate.

1.4 Working principle

The gross scale starts the two speed feeding process, coarse and fine feeding. The switching

of each speed feeding takes the corresponding reserve in the recipe as the stop point of different feeding speed. In order to avoid the influence of overshooting on the measurement, the corresponding weight forbid judging time is set; After the end of feeding, enter the WAIT process, the waiting time can be set, after waiting completed, the gross scale will drive the cylinder to open the discharging gate of the weighing hopper, when the weight of the material in the weighing hopper is lower than the zero zone value set before, the gross scale drive the cylinder to close the discharge gate, complete a feeding process; Before starting the next weighing process, The gross weight scale first performs a delay before feeding material, and then perform the next feeding, so the cycle runs.

2. Precautions for safe use

2.1 Safe Operation

Before installing and using the product, the product manual should be carefully read and the gross scale should be calibrated by professionals

2.2 Basic safety instructions

1. The power supply used meets the requirement of this manual, and the ground of the gross scale meets the requirement.
2. The power and air supply should be turned off before starting cleaning, maintenance and repair.
3. Only use cleaners that are not damaging to gross scale mechanical and electrical.
4. The mounting bracket connected to this product must be stable and secure.
5. Please cut off the power and air supply when installing the weighing hopper.
6. The weighing hopper, the parts connected with the loadcell and the loadcell are not allowed to knock, overload and other behaviors that damage the loadcell.
7. The gross weight scale is not allowed to extend any part of the body into the gross weight scale during use, and the scale body gate has been installed firmly before use.
8. The machine for packing materials harmful to human body should be cleaned after using special protective tools according to the existing regulations of the country where the machine is operated. For specific details, please contact the relevant local authorities.

2.3 Operating safety Instructions

1. In order to avoid dangerous accidents, only one person is allowed to operate the machine, and multiple people are not allowed to operate at the same time.
2. The machine can only be operated by personnel who have received formal training.
3. Before running the machine, the operator (or anyone responsible for operating the machine) must read and fully understand the operating instructions, especially the safety instructions and safety regulations.
4. Before the operation of the machine, the operator must check whether the scale is working normally, and whether the fixed and appearance of the machine is normal.
5. In case of danger, please click the "emergency stop" button on the main interface immediately or disconnect the main power supply immediately.
6. For electrical and electronic systems, unauthorized modification, replacement or any other irregular operation is not allowed.; Any replacement or alteration must be undertaken by General Measure Technology.
7. When maintaining the gross weight scale, especially when entering the packaging area for maintenance, please be sure to wear protective equipment such as a safety helmet.

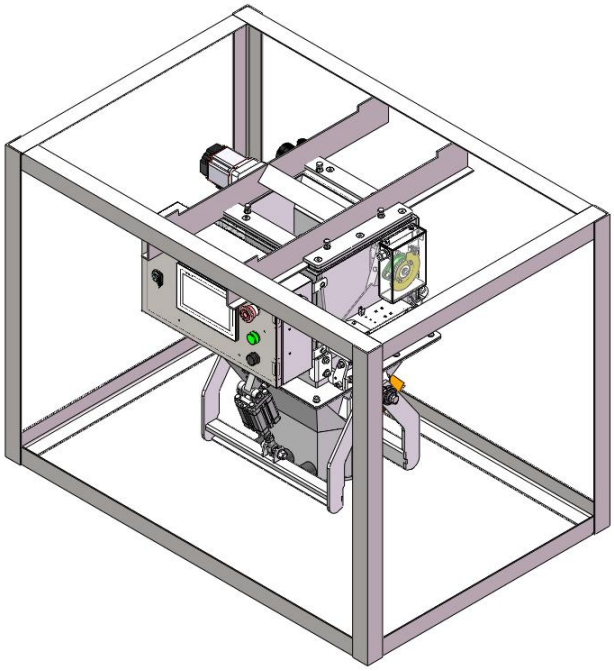
3. Product installation and transportation protection

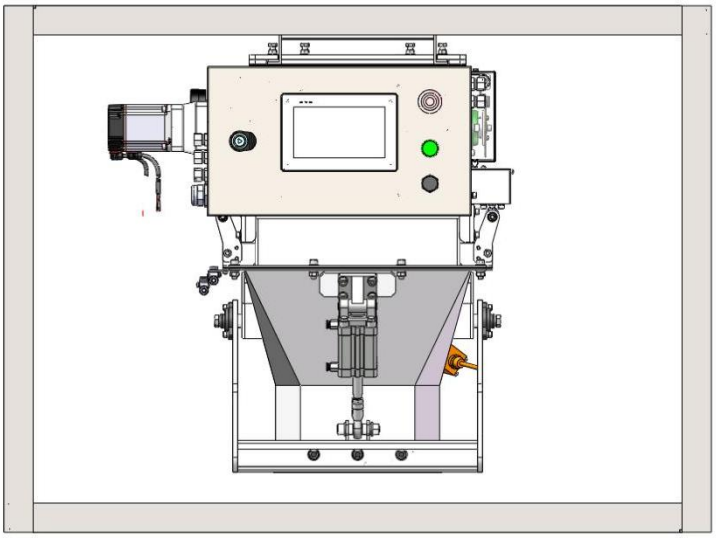
3.1 Transportation of bag clamper

The bag clamper weighing equipment is transported using a specific steel frame, in order to provide maximum protection for the bag clamper in the transportation process, and safely and smoothly reach the customer's operating location.

The specific steel frame of the bag clamper, please keep it, so that it can be reused in the subsequent movement, relocation, maintenance of the bag clamper.

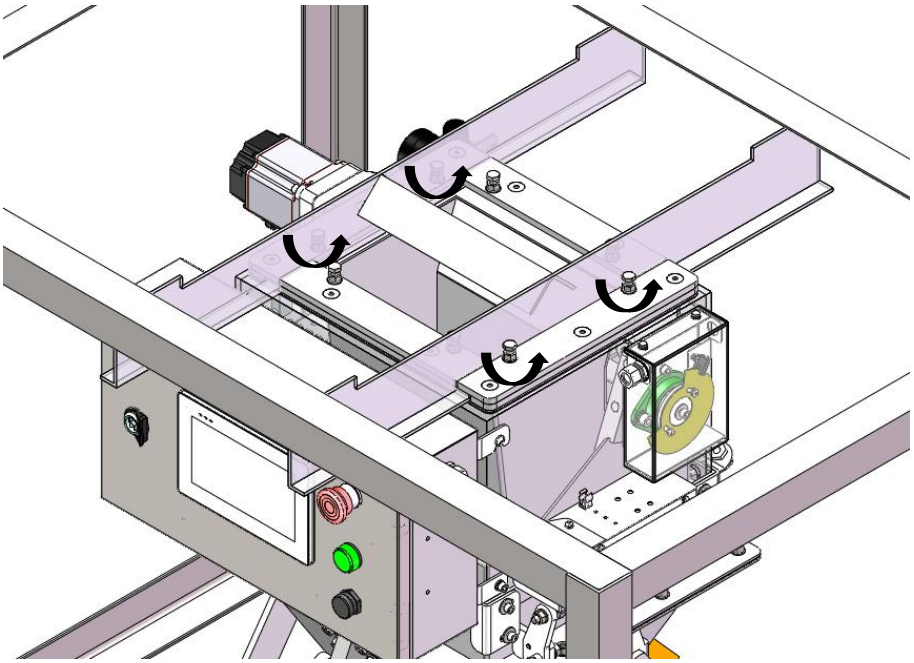
The following figure is the installation and connection layout of the bag clamper and the specific steel frame. Please read it carefully.



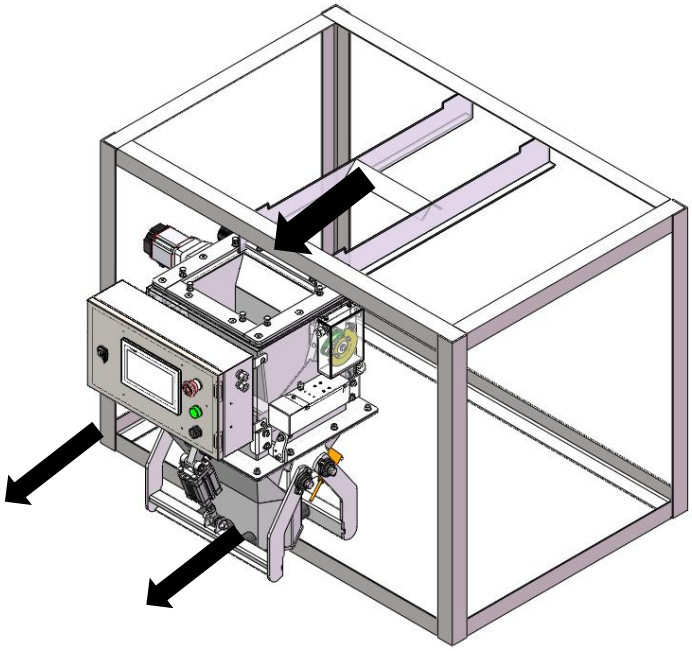


3.2 Unpacking and disassembling installation of bag clamper

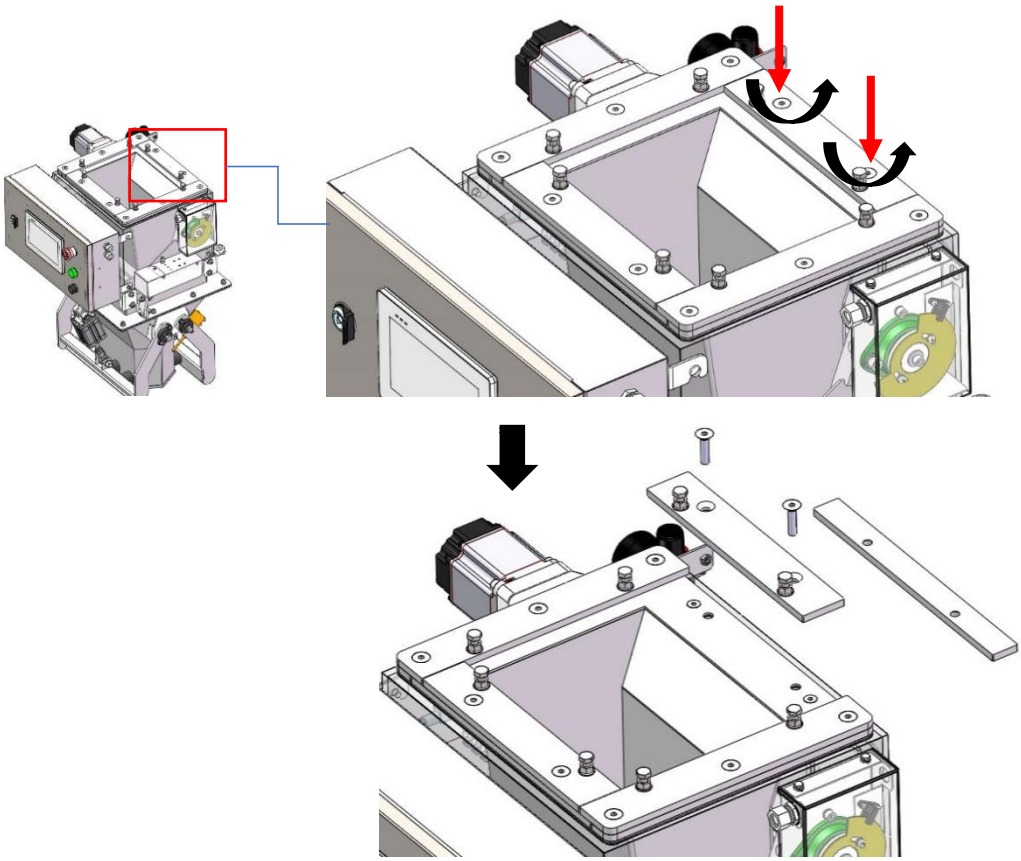
I. Loosen the top tightening screw wrapped by the black rotating arrow in the picture below but do not need to pull it out, so that the weighing scale can be dragged freely.



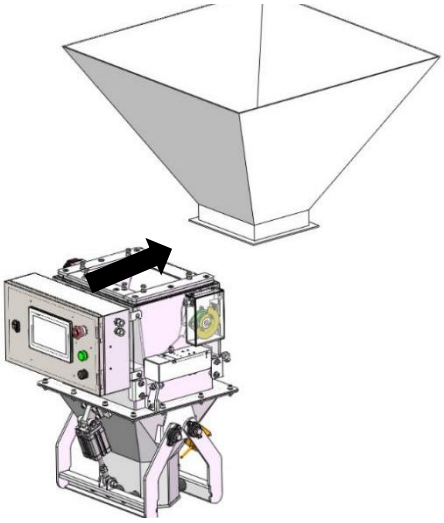
II. After removing the top bolts as shown above, please ensure the stability of the frame. It is recommended that three people perform the following operations at this time. Under the premise of ensuring the stability of the specific steel frame, the bag clamper is dragged away from the steel frame. Three people are required to lift the bag clamper evenly at the same time. It is strictly forbidden for the bag clamper to hit the ground.

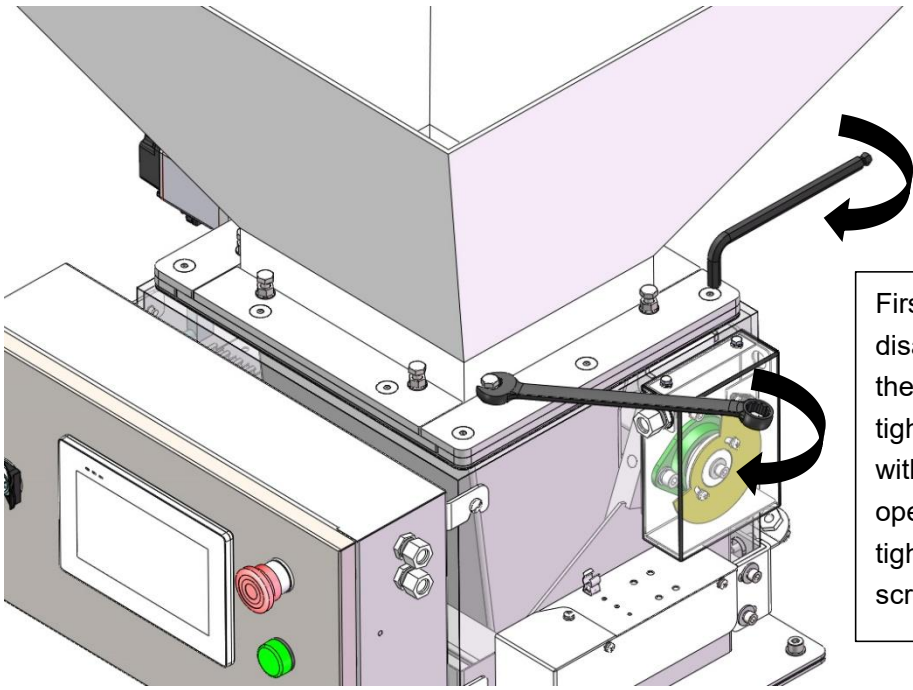


III. After taking it out from the specific steel frame, unscrew all the hexagon socket bolts indicated by the red arrow in a counterclockwise direction. After unscrewing them out, you can take out the parts shown in the exploded diagram and save them, and restore them after loading them into the hopper.



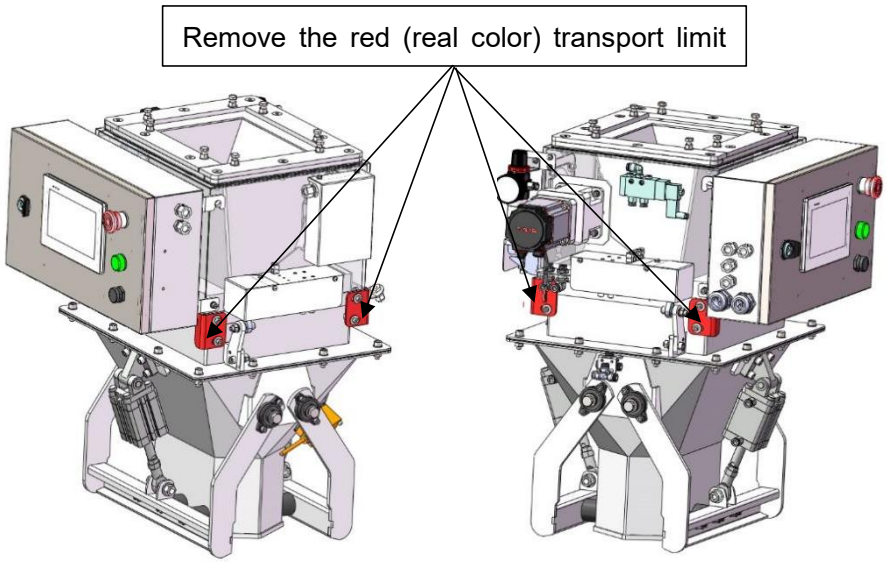
IV. Align the bag clamper installation position with the embedded edge of the hopper, slide it into the installation position, push it to the bottom, install the parts removed in the previous step into the corresponding position and tighten all bolts.





First, tighten the disassembled parts with the hexagon socket, then tighten the locking bolts with the thickness of the opening plate, and then tighten the locking screws. are locked

V. Finally, remove the transport limit plate of the bag clamping machine, and the bag clamper can be adjusted and used normally..



4. Electrical connections

4.1 Air source connection

Air source port φ6 gas pipe, air source standard: 0.4-0.6MPa 2m³/h

4.2 Electrical Connection

Plug the single-wire 220V power plug into the field power supply socket on the gross weight scale.

4.2.1 Definition of External interfaces

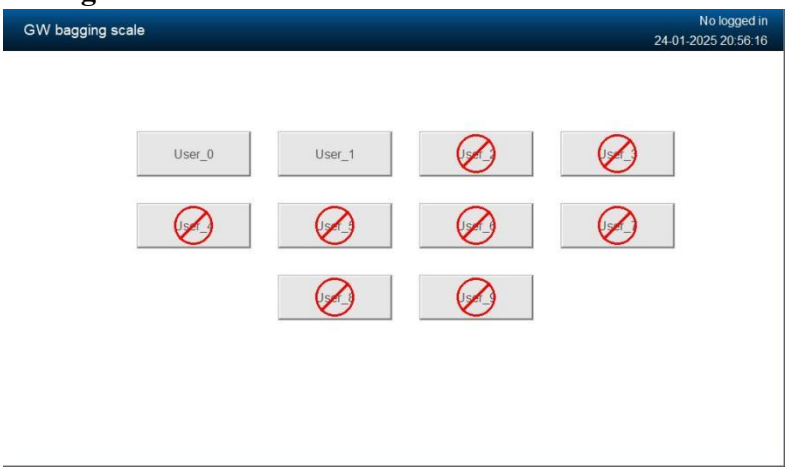
1. Power cable port, 24V power port of gross scale (24V+, 24V-).
2. Loadcell cable port, loadcell wiring port (SHLD, EX+, EX-, SIG+, SIG-).
3. RS485 communication port, serial port one (A, B, GND) can be used for upper computer communication, support Modbus communication.
4. RS232 communication port, serial port two (TXD, RXD, GND).
5. Input port, 12 customizable IO input interface (IN1~IN12), for low level valid, the definition of each port can be selected.
6. Output port, 16 customizable IO output interface (OUT1~OUT 16), the definition of each port can be selected.
7. USB interface for a variety of data import and export.
8. Network port can be networked and data transmission.

4.2.2 Description of IO Port trigger conditions

1. Output low level when the output port is valid, and high level by default when there is no output.
2. The default low level trigger on the input port is valid

5. Touchscreen Interface Introduction

5.1 User Select login interface:



When the Controller is powered on and started, the corresponding user can be selected to log in. The statistics of the filling results will be recorded under the corresponding selected logged-in user. In the actual site, the work records of different users can be settled (the figure supports two users: User 0 and User 1).

5.2 Main interface:

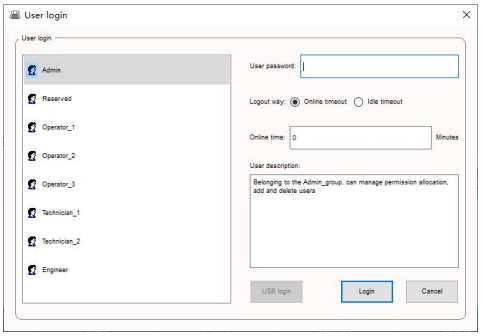
The main interface supports two styles, which can be set in the HMI Setting of the System Info interface.

Style 2:

1: Display the currently logged-in user :User_0

2: Click here: A pop-up window will pop up to log out when you have login permissions; In the absence of login permissions, a permission login interface pop-up will appear.

Unlogged: Logged:



Permission management is described as follows:

Permission	Corresponding permission description
Operator	Maintenance interface and system information interface only allow views, but not operational.
Admin	Only operate user management
Technician	Can perform communication setting, maintenance, and system information page operations
Engineer	All parameters except user management can be operated
Reserve	Allow all operations. The manufacturer reserves.

3: Zero Identifiers and stable identifiers,

when weight at zero point, the zero indicator will light up and switch >0< to **>0<** ;

When weight in stable state, the stable indicator will light up and switch to ;

4: Display the current tare weight.

5: Display the current weight, the current running status (stopped or running), the current weight status (net weight or gross weight), and the current weight display unit

6: Display the current status (coarse feed status, medium feed status, fine feed status, bag clamp status, over/under status, smart feed status), note: The smart feed status will only be activated after the smart debug is completed, and the corresponding indicator light will be on.

7: Smart calibrate scale button: Click this button and the device will enter the smart calibrate scale state until the weight of the scale reaches the target and accuracy, then the calibrate scale is completed, meanwhile the smart feeding indicator will light on.

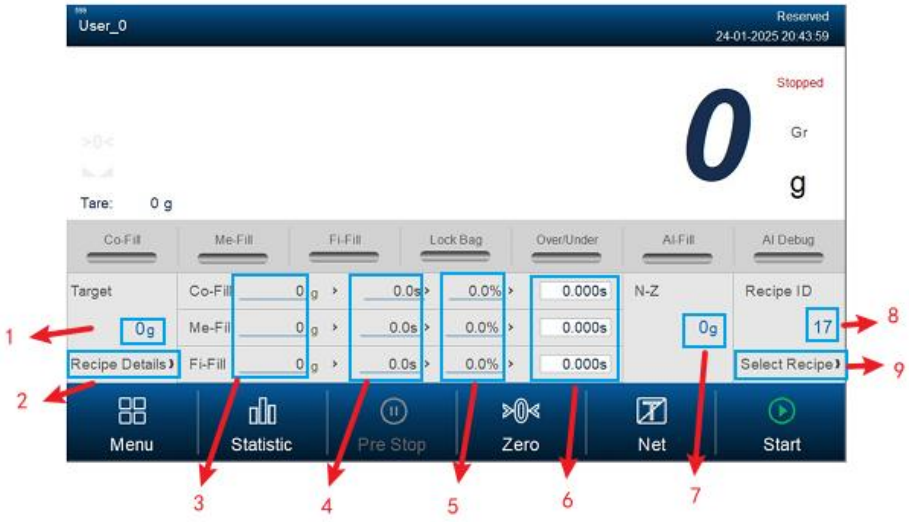
8: Display the target batch number and the current remaining batch number, the target batch number is editable.

9: Display the number of batches accumulated by the current user and the total accumulated weight.

10: Display the current material name, the current recipe ID number, and the current target weight. The material name is editable, the ID number is clickable to switch, and the target weight is clickable to set.

11: Can perform operations such as entering the menu interface, viewing statistics, Stop in advance, zeroing, switching gross/net weight display, start/stop, etc

Style 1: same as style 2, the same parts without much explanation.



1: Display the current recipe target weight value, editable.

2: Click to enter the formula details interface

3: The coarse feed, medium feed, and fine feed of the current recipe are displayed respectively, and quick Settings can be clicked.

Coarse Feed: coarse feed complete when weight value >= target weight – coarse reserve

Medium Feed: medium feed complete when weight value >= target weight – medium reserve

Fine Feed: fine feed complete when weight value >= target value – free fall,

4: The current formula's coarse forbid judge time, medium forbid judge time, and fine forbid judge time are displayed respectively, and quick settings can be clicked

The function of the forbid judge time: Within this time, the weight is not judged to indentify to prevent weight overshoot misidentification and inaccurate weighing

5: Display the percentage of coarse, medium and fine of the current recipe's motor respectively, and click to set quickly.

Opening percentage: The angle at which the current feeding motor opens the valve, different openings will affect the actual feeding speed and accuracy.

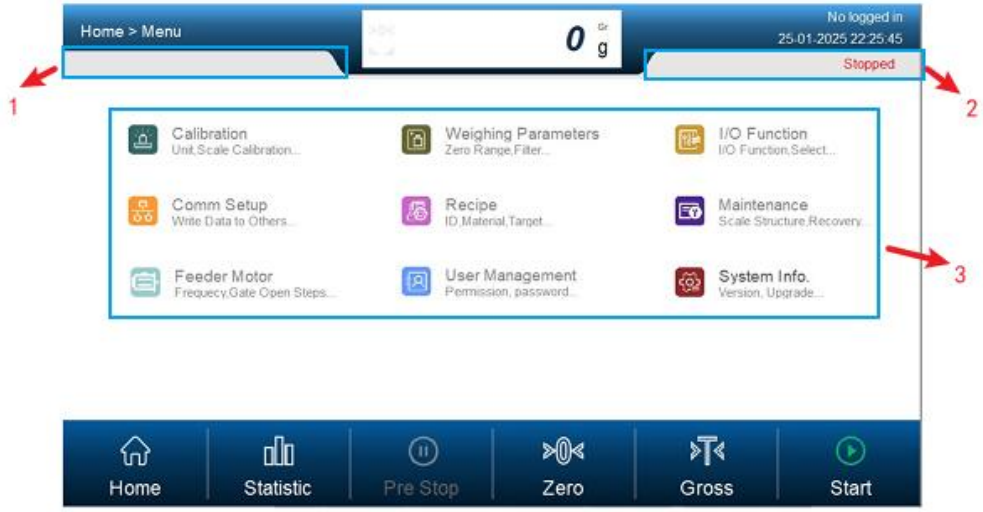
6: Display the actual coarse feeding time, medium feeding time and slow feeding time spent for the current batch respectively.

7: Display the current zero zone value, which can be set by clicking; Function: Close the discharge gate when the weight detection during discharging is below the zero zone.

8: Display the current recipe number.

9: Click to enter the recipe selection interface.

5.3 Menu interface:



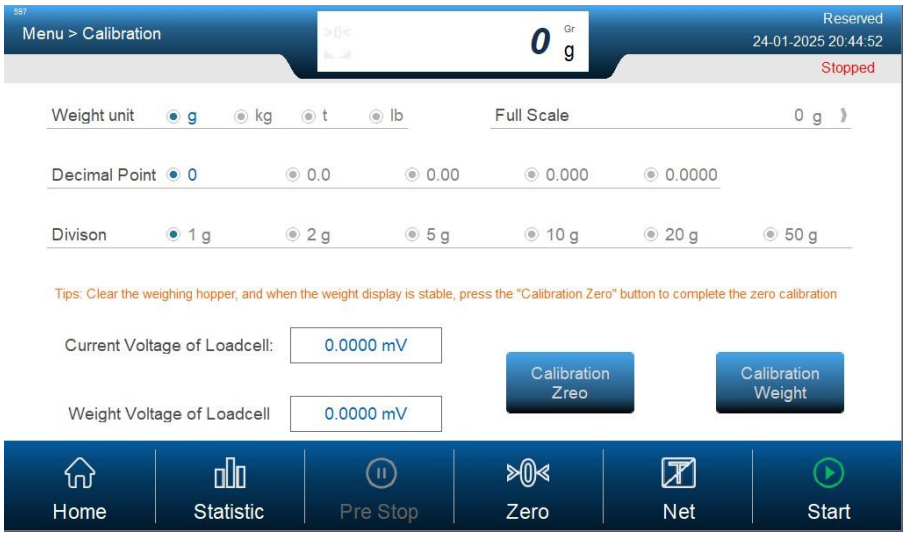
1: Display the current status prompt

2: Display the current status

3: Display different menu options: including calibration, weighing parameters, IO functions, communication parameters, recipe parameters, system maintenance,feeding motor, User management, system information.

Menu items	Content
Calibration	Unit, decimal point, division, full scale, zero calibration, gain calibration
Weighing Parameters	Zeroing range, filter level and other parameters
IO Function	Input/output definition
Comm. Setup	232/485/Ethernet parameter setup
Recipe	Recipe related parameter Settings
Maintenance	Scale structure, parameters reset
Feeder Motor	Parameters such as motor frequency, opening angle, acceleration and deceleration time, etc
User Management	User operations such as adding, deleting, modifying, etc
System Info	Main display style, date and time settings, view version number, system parameter reset, system firmware upgrade and other operations

5.4 Calibration interface:



The unit, decimal point, division value and full scale can be set on this interface, while zero calibration and gain calibration are also performed on this interface.

Parameters	Initial values	Notes
Weight Unit	**kg**	Range: **g/kg/t/lb**; The current unit of displayed weight
Decimal Point	**0.00**	Range: **0/0.0/0.00/0.000**;The number of decimal points for the current displayed weight
Division	**1**	Range: **1/2/5/10/20/50**;
Full Scale	**100.00**	Range: **<= Minimum division *10000**

The scale has been calibrated at the factory. If a discrepancy between the displayed weight and the actual weight is found on site, the calibration operation needs to be redone. Before the calibration operation, please log in to Technician or Engineer permissions!

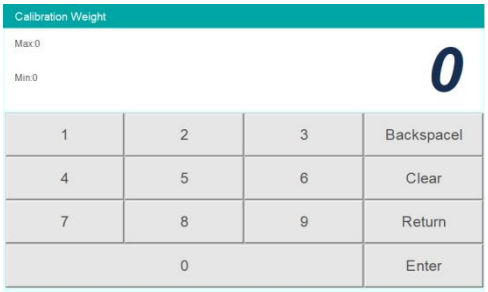
Calibration Steps as follows:

Step 1: Empty the hopper, click the button 

, the controller calibrates the current loadcell voltage as zero voltage, then zero calibration is complete.

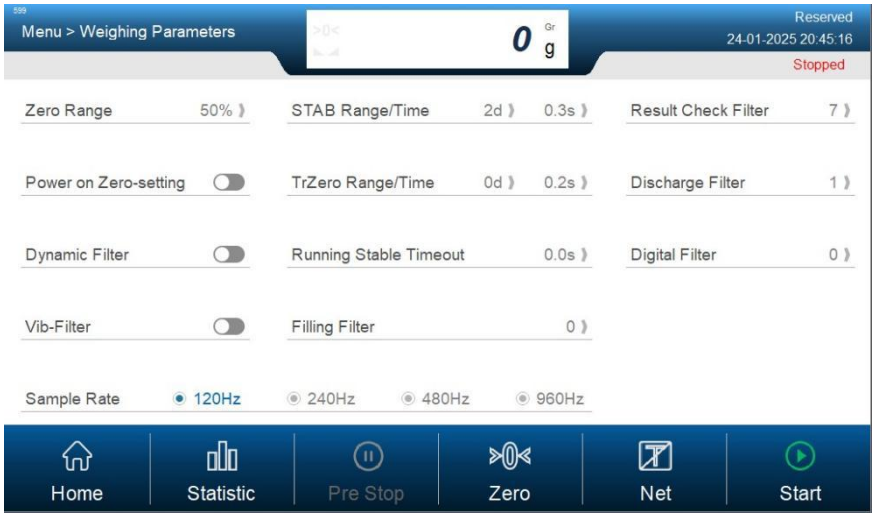
Step 2: load the weight, click the button 

, pop up the weight input keyboard, Enter the weight, click the Enter button, then the weight calibration is completed.



Step 3: Check the accuracy of the calibration: remove the weight, observe wether the displayed weight returns to zero, reload the weight, observe if the displayed weight is consistent with the weight of the weights, then the calibration is successful , otherwise the calibration is not successful!

5.5 Weighing parameters interface:



This interface sets the relevant parameters for weighing.

Parameters	Initial values	Notes
Zero Range	**50%**	Range: **1%-99%**(percentage of the full scale); means the zeroing range
STAB Range	**2d**	Range: **0-99(d)**; Weight is considered stable if it fluctuates within the range of the minimum division*STAB Range over a stable period of time
STAB Time	**0.3 s**	Range: **0.1-9.9(s)**;Weight is considered stable if it fluctuates within the range of the minimum division*STAB Range over the stable time
Result Check Filter	**7**	Range: **0-9**; The filtering level at weighing and waiting, 0 has the lowest filtering effect and 9 has the strongest filtering effect
Power on zero-setting	**Off**	Range: **Off/On**; When the gross scale is powered on, if the weight in the hopper meets the zeroing range, setting it to ON will automatically perform the zeroing operation
TrZero Range	**0d**	Range: **0-9(d)**;The weight is automatically displayed as 0 if it remains within the division value*zeroing range after the zeroing time
TrZero Time	**0.2 s**	Range:**0.1-99.9(s)**;If the weight remains within the range of the division value * zeroing after the zeroing time, the weight will be automatically displayed as 0
Discharge Filter	**1**	Range: **0-9**;The filtering level during discharging, 0 has the lowest filtering effect, 9 has the strongest filtering effect
Dynamic Filter	**Off**	Range: **Off/On**;Set to on, during the batch process, then perform filtering

Running Stable Timeout	**0s**	Range: **0-99.9(s)**;an alarm will be triggered when the steady-checking timeout is exceeded during operation
Digital Filter	**7**	Range: **0-9**; Filter levels when the device is in stop status
Vib-Filter	**off**	Range: **Off/On**; On the basis of the original filtering, set to ON, then perform the secondary filtering operation again.
Filling Filter	**4**	Range: **0-9**; During the feeding process, set to on, then perform the filtering process
Sample Rate	**240Hz**	Range: **120/240/480/960Hz**; Indicates how many times weight data is collected per second. The larger this value, the more times weight data is collected per second, indicating greater weight complexity.

5.6 IO interface:

1: Display the definition of the current input port, click here to pop up the input port definition window:

The output definition pop-up window is as follows:

Default input and output definitions:

Input:

Input port	Default definition
IN1	Start
IN2	E-Stop
IN3	Pause
IN4	Manual Co-Fill(Switch)
IN5	Manual Fi-Fill(Switch)
IN6	ZERO
IN7	Clear Alarm
IN8	Clear Total ACUM
IN9	None
IN10	None
IN11	Bag Lock/Unlock Request
IN12	Filler Gate Closed Pos.

Output:

Output port	Default definition
OUT1	Running
OUT 2	Stopped
OUT 3	Co-Fill
OUT 4	Me-Fill
OUT 5	Fi-Fill
OUT 6	HOLD
OUT 7	Alarm
OUT 8	Supplement Empty
OUT 9	Batch Complete
OUT 10	Lock Bag
OUT 11	Filler Gate DIR
OUT 12	Filler Gate PWM
OUT 13	None
OUT 14	None
OUT 15	None
OUT 16	None

Definition explanation:

Output definition:

Output definitions	Instructions
None	No function
Running	This definition is valid when the device is running
Stopped	The definition is valid when the device stops
Co-Fill	Coarse filling during the feeding process
Me-Fill	Medium filling during the feeding process
Fi-Fill	Fine filling during the feeding process
Lock Bag	Output pulses control the bag clamps
Hold	After the fine feed ends, the waiting output works
Ready	Waiting to get the result, the ready(weigh ok)signal to be effective
(-NZ-)	This definition works when the weight in the hopper is below the zero zone
FILL Supplement	When using double feed levels, check that the feed level is invalid, this definition is valid, and feed to the feed hopper.
Supplement Empty	When using single/double levels, if the discharge level is detected to be valid, this definition is valid and indicates that the feed hopper is lack of material
Alarm	This definition works when the device has an alarm
Over/Under	This definition works when the weight is over or under
Batch Complete	This definition works when the set target batches number is completed
Filler Gate PWM	Connect the feeding motor pulse interface (stepper motor)
Filler Gate DIR	Connect the feeding motor direction interface (stepper motor)
Filler Open	Connect the feeding motor to open the valve interface (ordinary motor)
Filler Close	Connect the feeding electrical valve interface (ordinary motor)
Bag Unlock	Connect motor loose bag interface (ordinary motor)

Input definitions:

Input definitions	Instructions
None	No function
Start	Pulse signal takes effect, input the pulse signal, and the device goes into running status
E-Stop	Pulse signal takes effect, input the pulse signal, and the device immediately enters the stop status.
To Stop	Pulse signal takes effect, input the pulse signal, and the device enters the stop status after completing this batch
Pause	Pulse signal takes effect. input the pulse signal, the device will enter the pause status. After clicking "Start", the device will continue to operate in the previous status
ZERO	Pulse signal takes effect, input the pulse signal, and the weight zero command will be executed
Clear Alarm	Pulse signal takes effect, input the pulse signal, and clear the alarm that is currently present

Bag Lock/Unlock Request	Pulse signal takes effect, input the pulse signal, trigger the bag lock, multiple triggers only work once
Clear Total ACUM	Pulse signals are effective, input pulse signals, and the device will clear the total accumulation
Manual Fi-Fill(Button)	Pulse signal takes effect, and it is triggered only when the stop state is used to manually trigger the fine fill action. If it is valid once, start the fine fill; if it is valid again, turn off the fine fill, and repeat this cycle
Manual Co-Fill(Button)	Pulse signal takes effect, and it is triggered only when the stop status is used to manually trigger the coarse fill action. If it is valid once, start the coarse fill; if it is valid again, turn off the coarse fill, and repeat this cycle
Change Recipe	Pulse signal takes effect, Input the pulse signal and the device will switch to the next recipe
Upper Level Mater	Level signal takes effect, and is used to connect the upper level of the feeding hopper
Lower Level Mater	Level signal takes effect, and is used to connect the lower level of the feeding hopper
Start/E-stop	Level signal takes effect, When valid, the device enters the running state; when ineffective, the device enters the emergency stop state
Start/Stop	Level signal takes effect,When valid, the device enters the running state; when invalid, the device enters the stop state
Manual Fi-Fill(Switch)	level signal takes effect, and triggers valid only when the stop state. Fine fill start when it is valid and stop when it is invalid
Manual Co-Fill(Switch)	Level signal takes effect, and triggers valid only when the stop state. Coarse fill start when it is valid and stop when it is invalid
Bag Locked	Level signal takes effect, and triggers valid only when the stop state, triggering the lock bag when it is valid
Filler Gate Closed Pos.	Level signal takes effect, when valid, it triggers the feeding gate to fully close the valve action
Fill Permission	Level signal takes effect, when valid, the equipment will enter the feeding process

2: Show the current signal status of the input and output ports, show gray when it is invalid, and change color when it is valid.

3: Click to enter the output definition interface

4: Click to enter the input definition interface

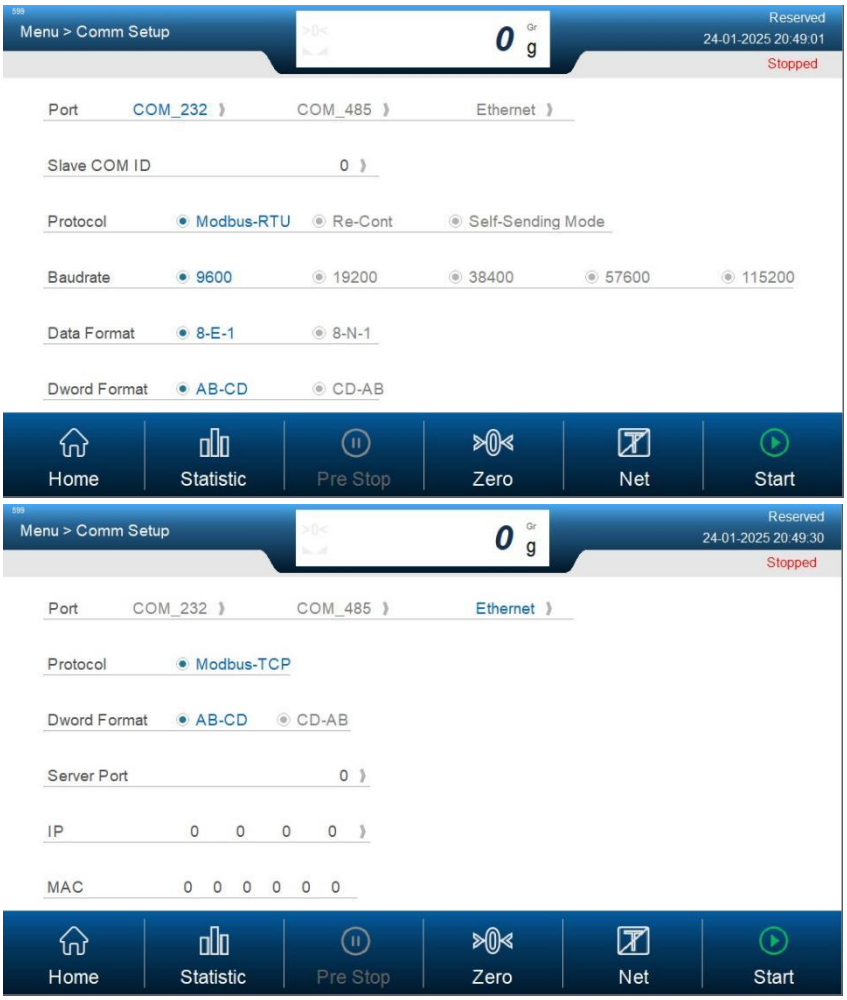
5: IO test switch. When this switch 

is turned on, it can test whether the input and output ports are normal

Output port test: With the test switch on, enter the output port interface and click on any one of the output definition ports to make the status indicator light on its left turn red, and the corresponding port output is valid

Input port test: With the test switch on, enter the input port interface. If an external signal is given to the corresponding input port, the status indicator light on the left side of the corresponding input port will turn blue, indicating that the input port has detected an effective input signal.

5.7 Communication interface:



The device supports 1 channel 232,1 channel 485 and 1 network port for external communication.

232 and 485 parameters description

Parameters	Initial values	Notes
Slave COM ID	**1**	Range: **1-99**; The slave number of the current 232 port
Protocol	**Modbus-RTU**	Range: **Modbus-RTU/Re-Cont/Self-Sending Mode**
Baud rate	**38400**	Range: **9600/19200/38400/57600/115200**
Data Format	**8-E-1**	Range: **8-E-1/8-N-1**
Dword Format	**AB-CD**	Range: **AB-CD/CD-AB**

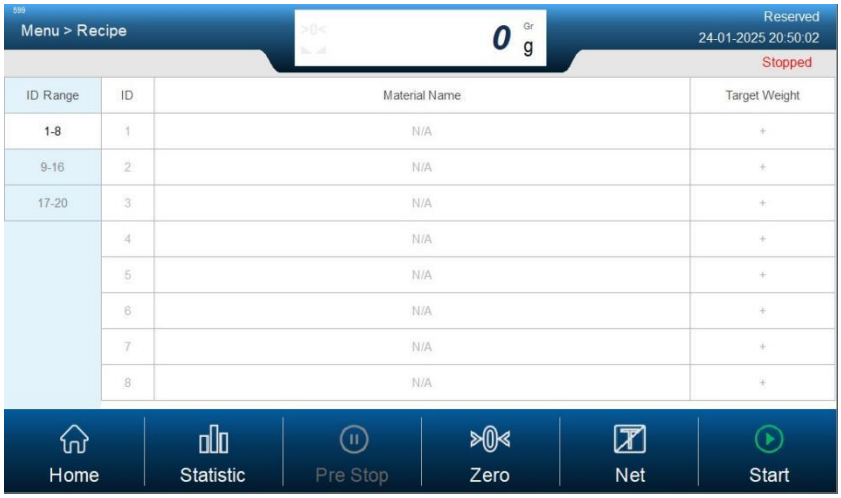
Network port parameters description

Parameters	Initial values	Notes
Protocol	**Modbus-TCP**	Range: **Modbus-TCP**; This protocol is currently supported only
Dword Format	**AB-CD**	Range: **AB-CD/CD-AB**
Server Port	**502**	Range: **1-65535**
IP1	**192**	Range: **0-255**

IP2	**168**	Range: **0-255**
IP3	**101**	Range: **0-255**
IP4	**246**	Range: **0-255**
MAC1	**BC**	
MAC2	**66**	
MAC3	**41**	
MAC4	**9X**	
MAC5	**XX**	
MAC6	**XX**	

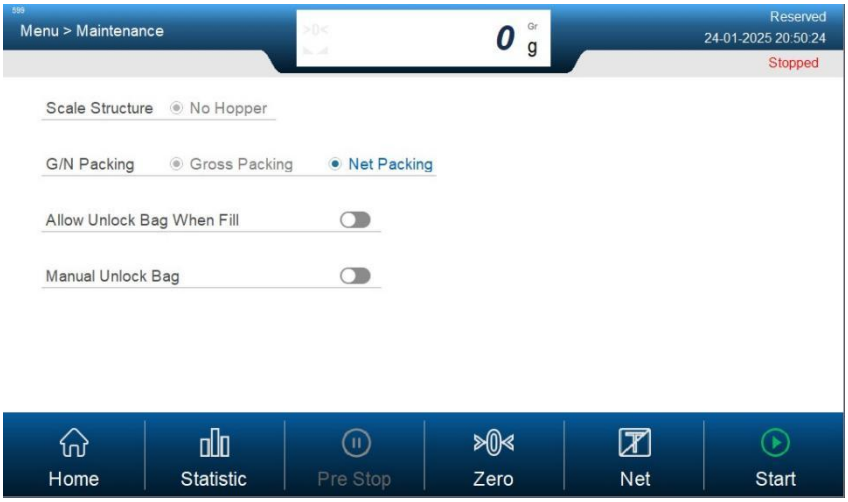
The interface shows selectable protocols, as well as parameters related to the communication format

5.8 Recipe interface:



A total of 20 recipes are supported, with each recipe mainly displayed as its material name and target weight. Double-click to enter the recipe details Settings interface.

5.9 System maintenance interface:

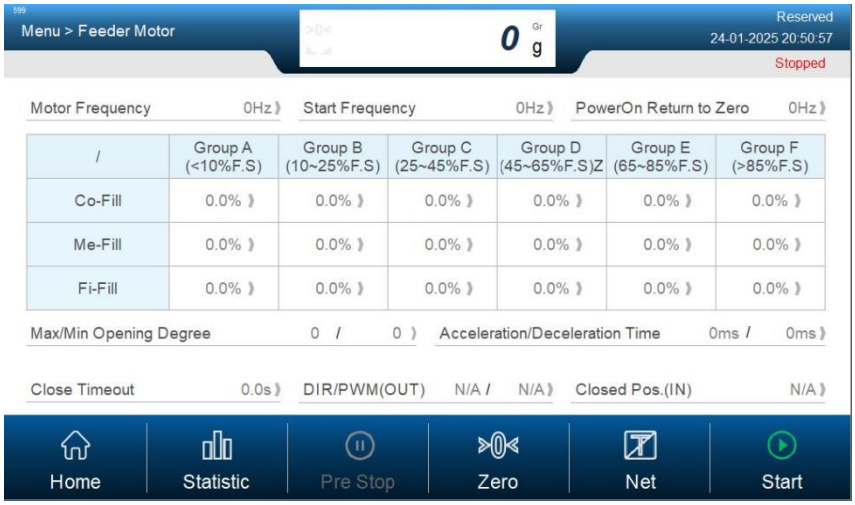


The interface allows to select the packaging mode, as well as some special behavior Settings during the feeding process.

Parameters	Initial value	Notes

Scale Structure	**No Hopper**	Range: **No-Hopper**, fixed non-modifiable
G/N Packing	**Net Packing**	Range: **Gross weight packing/net weight packing**
Allow Unlock Bag When Fill	**Off**	Range: **Off/On**. When set to on, loose bag is allowed in feeding
Manual Unlock Bag	**Off**	Range: **Off/On**. When set to on, manual loose bag is supported

5.10 Feeding motor parameters interface:



The parameters of this interface are set by factory default and no modification is required;

The interface involves motor frequency, starting frequency and power-on return-to-zero frequency

And the percentage opening angle of the motor for coarse feed、medium feed、fine feed.

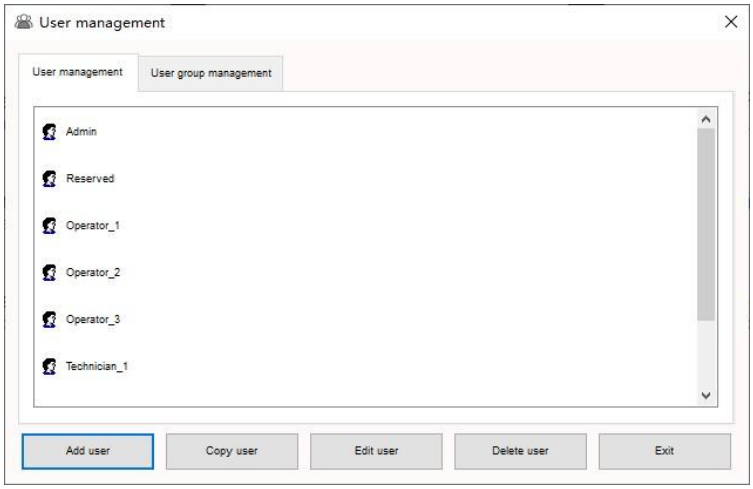
Maximum opening degree, minimum opening degree, acceleration time, deceleration time.

Close gate timeout, motor direction and pulse output, close gate in place input.

Parameters	Initial values	Notes
Motor Frequency	**40000Hz**	Range: **0-50000Hz**
Start Frequency	**5000Hz**	Range: **0-50000Hz**
PowerOn Return To Zero	**2000Hz**	Range: **0-50000Hz**
Group A(<10% F.S) Co-Fill	**22%**	Range: **0-1000** corresponds to **0-100%**
Group A(<10% F.S) Me-Fill	**0%**	Range: **0-1000** corresponds to **0-100%**
Group A(<10% F.S) Fi-Fill	**12%**	Range: **0-1000** corresponds to **0-100%**
Group B(10-25% F.S) Co-Fill	**36%**	Range: **0-1000** corresponds to **0-100%**
Group B(10-25% F.S) Me-Fill	**0%**	Range: **0-1000** corresponds to **0-100%**
Group B(10-25% F.S) Fi-Fill	**16%**	Range: **0-1000**, corresponding to **0-100%**
Group C(25-45% F.S)	**48%**	Range: **0-1000** corresponds to **0-100%**

Co-Fill		
Group C(25-45% F.S) Me-Fill	**0%**	Range: **0-1000** corresponds to **0-100%**
Group C(25-45% F.S) Fi-Fill	**17%**	Range: **0-1000** corresponds to **0-100%**
Group D(45-65% F.S) Co-Fill	**57%**	Range: **0-1000** corresponds to **0-100%**
Group D(45-65% F.S) Me-Fill	**0%**	Range: **0-1000** corresponds to **0-100%**
Group D(45-65% F.S) Fi-Fill	**18%**	Range: **0-1000** corresponds to **0-100%**
Group E(65-85% F.S) Co-Fill	**66%**	Range: **0-1000** corresponds to **0-100%**
Group E(65-85% F.S) Me-Fill	**0%**	Range: **0-1000** corresponds to **0-100%**
Group E(65-85% F.S) Fi-Fill	**19%**	Range: **0-1000** corresponds to **0-100%**
Group F(>85% F.S) Co-Fill	**69%**	Range: **0-1000** corresponds to **0-100%**
Group F(>85% F.S) Me-Fill	**0%**	Range: **0-1000** corresponds to **0-100%**
Group F(>85% F.S) Fi-Fill	**20%**	Range: **0-1000** corresponds to **0-100%**
Max Opening Degree	**13000**	Range:**0-60000**; Maximum opening of the feeding motor valve
Min Opening Degree	**1300**	Range:**0-60000**; Minimum opening of the feeding motor valve
Acceleration Time	**50ms**	Motor acceleration time
Deceleration Time	**50ms**	Motor deceleration time
Close Timeout	**4.0s**	Range:**0-99.9s**; Motor close gate timeout time
DIR	**OUT11**	Motor direction output port definition
PWM(OUT)	**OUT12**	Motor pulse output port definition
Closed Pos.(IN)	**IN12**	Motor close valve in place Input signal in place

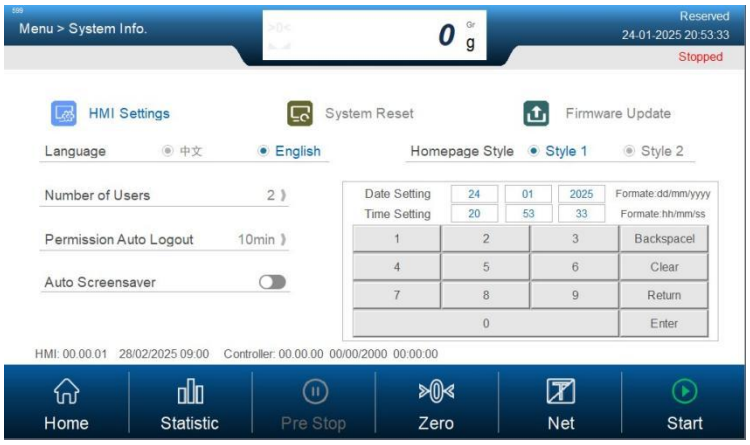
5.11 Permission interface:



Users can modify, copy, edit, and delete different permissions.

5.12 System information interface:

1. HMI Settings:

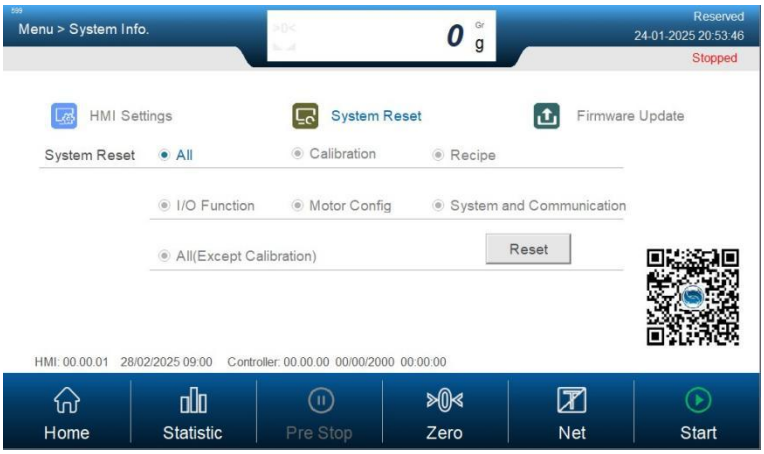


The interface allows you to choose the display language (Chinese/English), as well as the display style of the main interface (Style 1 and Style 2), the users you can choose to log in (up to 10), the automatic logout time of permissions, the screen saver function switch (if it is on, could enter the screen saver weight interface after a period of time, the screen saver interface is as follows), Display the corresponding front-end and back-end version numbers and the corresponding compilation time, as well as set the display date and time.

Parameters	Initial	Notes

	values	
Language	**English**	Range: **Chinese/English**
Homepage Style	**Style1**	Range: **Style1/Style2**. Different display styles for the main interface.
Number of Users	**2**	Range: **0-10**; The number of users currently logged in
Permission Auto Logout	**10(min)**	Range:**1-60(min)**; Set to 0, will keep current permission.
Auto Screensaver	**Off**	Range：**Off/On**, set to on, enter the screen saver function
Screensaver Time	**1(min)**	Range:**1-60(min)**, after the time, enter the screen saver interface

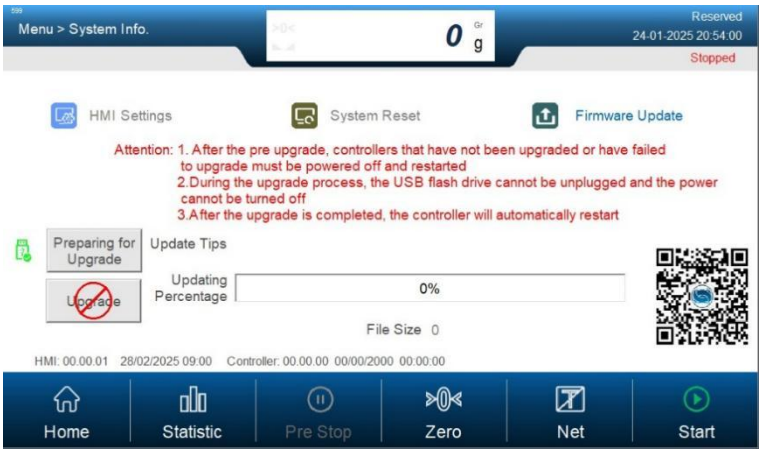
2. System reset:



The system reset interface can prevent some problems caused by modifying parameters and can be restored to factory Settings for processing.

Options	Notes
All	Click on this item to restore all parameter values of the gross scale to factory Settings
Calibration	Click on this item to restore calibration parameter values to factory Settings
Recipe	Click on this item to restore recipe parameter values to factory Settings.
I/O Function	Click on the recovery IO definition the parameter value to factory setting value.
Motor Config	Click on this item to restore motor parameters to factory Settings.
System and Communication	Click on this item to restore system and communication parameter values to factory Settings.
All(Except Calibration)	Click on this item to restore all parameter values of the gross scale (except for the calibration parameters) to factory setting values.

3. Firmware upgrade:



Upgrade the current controller program version and synchronize the latest program (mainly to fix the program due to bugs in the current software version).

Upgrade steps:

Upgrade Front-end:

Step1: Insert the pen driver containing the upgrade kit "**tpcbackup**" into the gross scale;

Step2: Power on the gross scale, and pop up "you are using mcgsTpc USB flash drive comprehensive function package, click 'Yes' to enter the system setting interface and start the comprehensive function package, click 'No' to exit "; After clicking "Yes", the "User Project Update" button pops up.

Step3: After clicking the "User Project Update" button, select GM9907-L6 Project to start downloading.

Step4: Controllert will automatically restart after successful download.

Upgrade Back-end:

Step1: Plug the pen driver into the computer and create a folder "GM9907-L6" inside the pen driver;

Step2: Save the file "**GM9907-L-Upload.gm"** into the folder "GM9907-L6";

Step3: Insert the pen driver into the gross scale, switch to the system administrator permission, go to the System maintenance - Software Upgrade interface, long press the blank area at the lower right corner over 5s, the "Click Upgrade" button pops up, jump to the upgrade interface, click Upgrade, click upgrade again, the "upgrading" will appears, indicating that the gross scale is upgrading back-end firmware.

Step4: Wait for the progress bar to finish, countdown 10s after the upgrade successfully jump to the start and login interface

Upgrade Custom Logo Image:

Step1: Put the (resolution: **800*480**, format: **.bmp**) image file and the upgrade boot screen project package **(tpcbackup)** to the root path of the pen driver;

Step2: Insert the pen driver into the gross scale USB port.

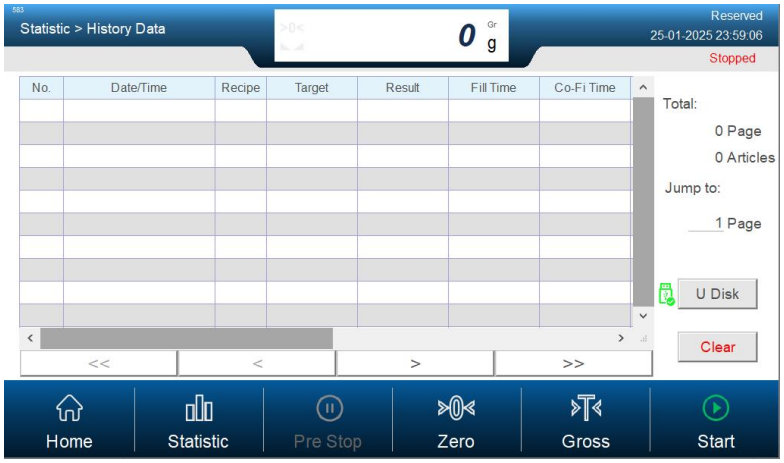
Step3: HMI pop up【Supplier U disk toolkit】display box, select "update startup bitmap".

Step4: Enter The Logo Picture Select Interface, Select the corresponding picture, click "**OK**", It will prompt that the bitmap update is successful, and then restart.

4. Statistics interface:

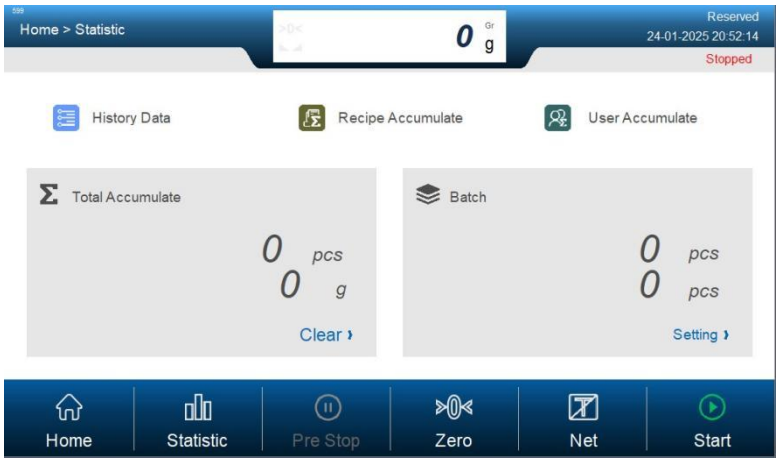
The in-memory data in the statistics can support up to 5.14 million data.

1. History record:



Up to 10 data items per page, including sequence number, storage date, recipe id, target value, result, total feeding time, coarse feed time, medium feed time, fine feed time, waiting time, coarse reserve, medium reserve, fine reserve; The total number of pages will also be displayed, and can jump to the corresponding page, and switch between the first page, the previous page, the next page, and the last page with the left and right arrows at the bottom. USB flash drive insertion and export of historical data, and support regular manual clearing when there is too much historical data.

2. Recipe accumulation:



This interface shows the cumulative batches and cumulative weights for all statistics of the system, as well as the target batches setting, and the remaining batches

3. User cumulative:

The User accumulation interface allows you to select the corresponding user data for export to a USB drive, and it can also be manually cleared.

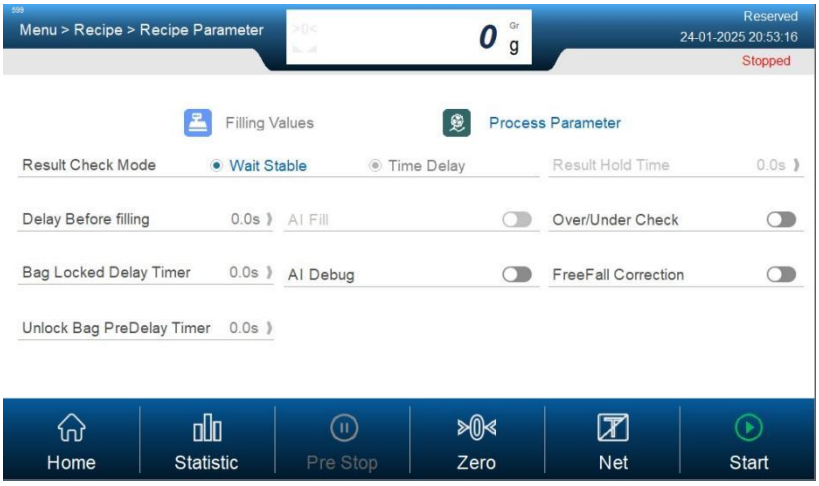
5.13 Recipe parameters interface:

1. Filling Values

This interface can be entered by clicking on the recipe details on the main interface or by double-clicking icon on the recipe details interface. select the corresponding recipe number, set the corresponding recipe name, as well as the target weight and zero zone value, and be consistent with the main interface style 1 quick feed parameter Settings.

Parameters	Initial values	Notes
Recipe ID	**1**	Range: **1-20**;
Meterial Name	**N/A**	Up to 10 characters input are supported
Target Weight	**50.00Kg**	Range: **0- Capacity**. The target weight of ingredients actually needed.
NearZero Band	**0.00Kg**	When discharging, if a weight is detected to be less than or equal to NearZero Band, close the discharge gate.

2. Formula flow parameters



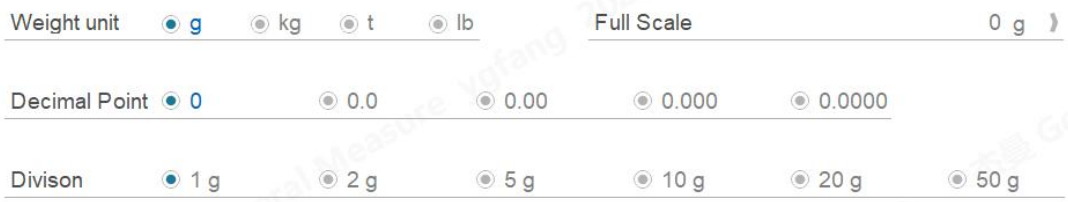
This interface can set the setting mode of the recipe, the waiting time, the delay before feeding, the intelligent feeding switch, the over-limit and under-limit detection function, the delay for bag clamping and loosening, and the intelligent calibrate scale switch (with the same function as the intelligent scale calibration button on the main interface). free fall correction function switch and bag release delay.

Parameters	Initial values	Notes
Result Check Mode	**Wait Stable**	Range: **Wait Stable/Time Delay** Wait Stable: Output waiting signal when waiting for the weight to stabilize Time Delay: Output waiting signal after a delay
Result Hold Time	**0.5 s**	Range: **0.0-99.9**(s); Result Check Mode takes effect after selecting Time Delay. After that time, it is considered that the waiting process is complete and proceed to the next process.
Delay Before filling	**0.5 s**	Range: **0.0-99.9**(s); At the start of feeding, after this delay time, perform stability-judging and zeroing (if the conditions do not meet the zeroing interval conditions, no stability-judging, no zeroing); Then start feeding.
AI Fill	**Off**	Range: **Off/On**, set to On, the device will automatically adjust the reserve parameters according to the actual situation of each feeding to ensure the weight of the feeding is accurate.
Over/Under Check	**Off**	Range: **Off/On**; Set it to On, and during the weighing process there will be an over/under detection judgment.
Bag Locked Delay Timer	**0.5 s**	After this period of time, start bag clamping.
AI Debug	**Off**	Range: **Off/On**, set to On, the device will automatically adjust the feeding reserve parameters, coarse, medium and fine opening angle according to the set target value to release accurate feeding speed

		and precision
FreeFall Correction	**Off**	Range: **Off/On**, set to On, then the free fall value will be corrected in subsequent batches
Unlock Bag PreDelay Timer	**0.5 s**	Range: **0.0-99.9**(s), after this time, output bag-loosening signal before bag-loosening begins.

6. Quick Operate Device Process Guide

1. **Step1**: First, connect the corresponding external input and output ports of the corresponding device. Enter the IO test to conduct the input and output port test. The operation of the IO test is described in the IO interface.
2. **Step2**: Set the calibration parameters (weight, unit, decimal point) for the device adaptation site, put in the corresponding weights and check if they are consistent. If they are not consistent, recalibrate. See the calibration interface for explanations of the calibration operation



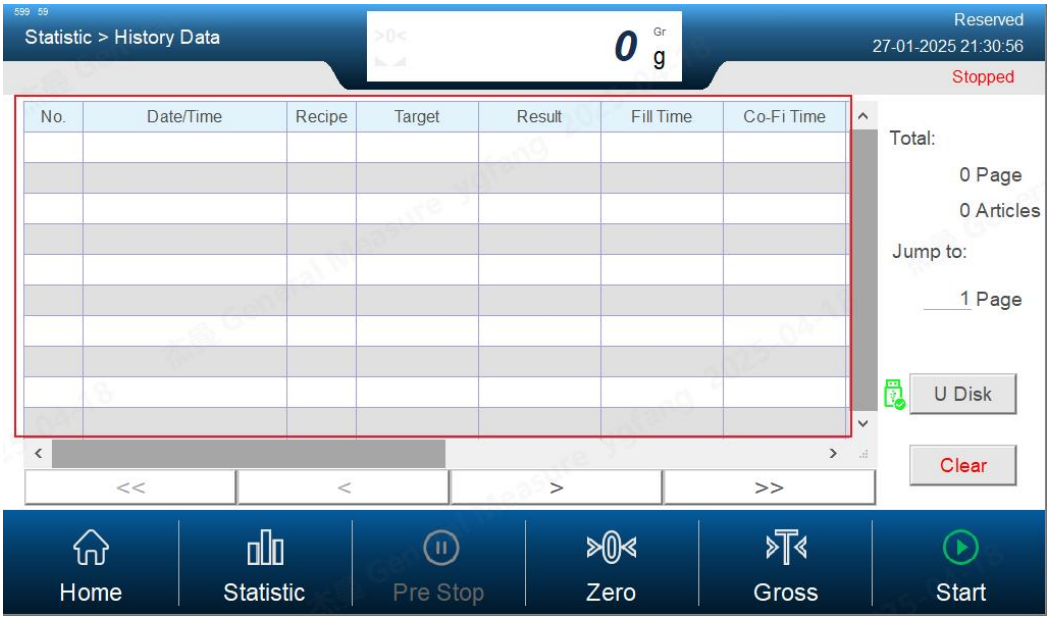
3. **Step3**: Enter the formula interface, set the name of the material, the weight value, and the zero zone value.

4. **Step4**: According to user habits, select the corresponding main interface display style and enter the system information interface to set.

5. **Step5**: If you need a target batch, you can first set the corresponding target batch, click Statistic on the main interface, and click Setting as shown in the picture

6. **Step6**: Go back to the main interface, as shown in the picture, first click 1- Start, then click 2-AI-Debug to start the automatic scale adjustment, Show AI Debugging...

When the weighing is completed, the AI Debugging text will change to Debuged, and at the same time, the AI-fill status indicator light will light on and enter the intelligent feeding status, then the device can work normally and can enter the history record to view the data of each batches.



7. Mobus Address Sheet

PLC address	Protocol address	Contents	Instructions	
40001-40002	0-1	Gross weight	Signed integer	
40003 to 40004	2-3	Net weight	Signed integer	
40005 to 40006	4-5	Tare value	Signed integer	
40007	6	Control state	.0	Weight unstable: 0; Stable: 1
			.1	Non-zero: 0; Zero: 1
			.2	The current weight symbol: +/- Positive sign: 0; Negative sign: 1
			.3	Overflow
			.4	Weight positive overflow
			.5	Weight negative overflow
			.6	Loadcell positive overflow
			.7	Loadcell negative overflow
			.8	Millivolts Stable: 1; Unstable: 0
40008	7		9-31	Reserved
40009	8	Running status	.0	0: Stop; 1: Run
			.1	Before feeding
			.2	Coarse feeding
			.3	Medium feeding
			.4	Fine feeding
			.5	WAIT
			.6	Weigh OK
			.7	Discharge
			.8	Zero zone
			.9	Over
			.10	Under
			.11	Qualified
			.12	Over/Under Pause
			.13	Clip/Unclip bag
			.14	Reserved
			.15	Reserved
40010	9		.16	Reserved
			.17	Reserved
			.18	Reserved
			.19	Reserved
			.20	Reserved
			.21	Reserved
			.22	Reserved

			.23	Batches completed
			.24	Alarm
			.25	Gross/Net weight Status: 0-net, 1-gross
			.26	Empty Material
			.27	Reserved
			.28	Reserved
			.29	Wait for completion(In Gross mode, after loosening the bag, until the end of this feeding, the mark is valid)
			.30	Slow stop flag
			.31	Pause flag
40011	10	Control status	.0	Dual scale interlock output (interlock mode)
			.1	Upper Level
			.2	Lower level
			.3	Supply Material
			.4	Lack Material
			.5	Cut Off material
			.6	Reserved
			.7	Reserved
			.8	Discharge vibration
			.9	Reserved
			.10	Reserved
			.11	Reserved
			.12	Auxiliary Pulse 1
			.13	Auxiliary Pulse 2
			.14	Auxiliary Pulse 3
			.15	Auxiliary Pulse 4
40012	11		.16	Relay Output 1
			.17	Relay Output 2
			.18	Relay output 3
			.19	Relay output 4
			.20	Relay output 5
			.21	Relay output 6
			.22	Reserved
			.23	Reserved
			.24	Manual Jog feeding
			.25	Manual discharge
			26-31	Reserved
40013-40014	12-13			Reserved
40015	14	Auto clear alarm	.0	Recipe Settings are not reasonable

			.1	OFL when starting
			.2	Zeroing out of range
			.3	Zeroing is unstable
			.4	Over/Under alarm
			.5	Leave discharge limit alarm
			.6	Not clamp bag
			.7	Zero during running
			.8	Auto zero out of range
			.9	Auto zero is unstable
			.10	Feeding gate not closed in place alarm
			.11	Discharge gate not closed in place alarm
			.12	Ordinary motor feeding, Fine feeding time setting can not be 0
			.13	Ordinary motor feeding, Medium feeding time can not be less than the fine feeding time
			.14	Ordinary motor feeding, Coarse feeding time can not be less than the medium feeding time
			.15	Ordinary motor feeding, Coarse time can not be less than fine feeding time
40016	15		.16	Judge steady timeout when running
40017-40020	16-19			Reserved
40021	20	Manually clear alarm	.0	Batches completed
			.1	Over/Under pause
			.2	Motor feeding gate closing timeout
			.3	Clamp Bag timeout
			.4	Loose Bag timeout
			.5	Discharge closing gate timeout
			.6	Discharge opening gate timeout
			.7	Reserved
			.8	Reserved
			.9	Motherboard attachment board communication failed
			.10	Coarse feed timeout
40022	21		.11	Medium feed timeout
			.12	Fine feed timeout
			.13	Discharge timeout
			.14	Discharge vibration timeout
			15 to 31	Reserved
40023-40026	22-25		Reserved	Reserved

40027	26	Calibration alarm	.0	No Alarm
			.1	The maximum range is too small
			.2	The maximum range is too large
			.3	Zero point voltage too high
			.4	Zero point voltage too low
			.5	Zero calibration is unstable
			.6	Gain voltage is too high
			.7	Gain voltage is too low
			.8	Unstable
			.9	Weight input error!
			.10	The resolution after calibration is too small
40028	27		11-31	Reserved
40029-40030	28 or 29	Alarm 3	Reserved	Reserved
40031-40032	30 and 31	Total cumulative weight high 6 bits	Read Only	0 ~ 999999
40033-40034	32 ~ 33	Total cumulative weight low 9 bits		0 to 999999999
40035-40036	34-35	Total cumulative batches		0 to 999999999
40037-40038	36 and 37	Current recipe cumulative weight high 6 bits		0 to 999999
40039-40040	38 and 39	Current recipe cumulative weight low 9 bits		0 to 999999999
40041-40042	40-41	Current recipe cumulative Batches		0 to 999999999
40043-40044	42-43	User cumulative weight high 6 bits		0 to 999999
40045-40046	44-45	User cumulative weight low 9 bits		0 to 999999999
40047-40048	46-47	User cumulative Batches		0 to 999999999
40049	48	Remaining batches		
40050	49	Coarse feed time		
40051	50	Medium feed time		
40052	51	Fine feed time		

40053	52	Wait time		
40054	53	Discharge time		
40055	54	Previous Batch es time		
40056-40057	55-56	Previous Batch weight		
40058-40059	57-58	Packing speed		
40060-40061	59-60	Flow speed		
40062 to 40100	61-99	Reserved		
Calibration				
40101	100	Unit	0: g; 1: kg; 2: t; 3: lb	
40102	101	Decimal point	0 to 4	
40103	102	Division	1,2,5,10,20,50	
40104 to 40105	103-104	Maximum range	Initial value: 10.000; ≤ minimum division ×100000 can be set	
40106 to 40107	105-106	Zero point calibration		
40108-40109	107-108	Gain calibration with weight	Write the current weight's weight, calibration gain read return relative zero millivolts, default: 3 decimal points	
40110 to 40111	109-110	Gain calibration without weight (millivolts)	Write the current weight's weight, calibration gain read return relative zero millivolts, default: 3 decimal points	
40112-40113	111-112	gain calibration without weight (weight)	Weight corresponding to millivolts of gain calibration without weight, defaults: 3 decimal points	
40114	113	Loadcell sensitivity	Gain millivolts without weight, Default:3 decimal points	
40115-40116	114-115	Gross scale loadcell power supply		
40117-40118	116-117	loadcell maximum capacity		
40119 to 40200	118-199	Reserved		
Working parameters - Weight parameters				
40201	200	Stable range	In the stability judgment time, the weight change range within this setting value is judged as stable by the gross scale. Initial value: 2; Range: 0 to 99(d). The value set to 0 indicates always stable.	

40202	201	Stable time	Initial value: 0.3s Range: 0.1 to 9.9
40203	202	Zero range	Zero range. Initial value: 50; Range: 1 to 99 (percentage of full capacity).
40204	203	Zero tracking range	Weight value within this range, gross scale automatically zero. When it is 0, zero tracking is not performed. Initial value: 0; Range: 0 to 9
40205	204	Zero tracking time	Initial value: 2.0s; Range: 0.1 to 99.9
40206	205	AD sampling speed	A/D sampling rate: 120 times/s, 240 times/s, 480 times/s, 960 times/s optional, initial value: 480 times/s.
40207-40250	206-249	Reserved	
Working parameters - filter parameters			
40251	250	Stop filtering level	
40252	251	Secondary filter switch	On/Off optional, secondary filtering on the basis of digital filtering. Initial value: Off.
40253	252	Dynamic filter switch	
40254	253	Feed filter level	
40255	254	Wait filtering level	
40256	255	Discharge filter level	
40257-40300	256-299	Reserved	
Working parameters - Functional parameters			
40301	300	Power-on auto zero	
40302	301	Automatic zero interval	
40303	302	Run judge Stable timeout	
40304	303	Wait mode	
40305	304	Manual discharge accumulation	
40306	305	Wait weight hold	
40307	306		
40308	307		
40309	308	Manual loose bag switch	

40313	312	Allow loose bag switch while running	
40314-40350	313-349	Reserved	
Working parameters - structural parameters			
40351	350	Scale structure	
40352	351	Working Mode	
40353	352	Packing mode	
40354	353		
40355	354	Feeding mode	
40356	355	Double scale loose bag mode	
40357 to 40500	356-499	Reserved	
Recipe parameters –Target parameters			
40501 to 40502	500-501	Recipe ID	Initial value: 1; Range: 1-20
40503 to 40504	502-503	Target value	Target weight of the feed.
40505-40506	504-505	Coarse feed reserve	When current weight ≥ the target value –coarse feed reserve, end coarse feeding, enter the medium feeding process.
40507-40508	506-507	Medium feed reserve	When current weight ≥ the target value – coarse feed reserve – medium feed reserve, end medium feeding, enter the fine feeding process.
40509-40510	508-509	Fine feed reserve	When current weight ≥ the target value – coarse feed reserve – middle feed reserve – fine feed reserve, end fine feeding, enter the wait process.
40511-40512	510-511	Coarse feed steps	Default: 0, and ranges 0-1000 correspond to 0-100%
40513 to 40514	512-513	Middle feed steps	Default: 0, and ranges 0-1000 correspond to 0-100%
40515 to 40516	514-515	Fine feed step	Default: 0, range 0-1000 corresponds to 0-100%
40517 to 40518	516-517	Zero zone	Default: 100, range 0-999999
40519 to 40520	518-519	Self-learning switch	Default 0,0: off, 1: On, 2: On and calibrate scale completed
40521 to 40522	520-521	Adaptive switch	Default 0,0: off, 1: On
40523 to 40550	522-549	Reserved	
Recipe parameters - time parameters			
40551	550	Delay before feeding	
40552	551	Coarse feed compare inhibit time	
40553	552	Medium feed	

		compare inhibit time	
40554	553	Fine feed compare inhibit time	
40555	554	WAIT hold time	
40556	555	Delay after clamping bag	
40557	556	Delay before loosening bag	
40558	557	Discharge delay	
40559-40600	558-599	Reserve	
Recipe parameters - over and under detection parameters			
40601	600	Over/under detection switch	
40602	601	Over/under pause switch	
40603	602	Over/under alarm time	
40604-40605	603-604	Over value	
40606-40607	605-606	Under value	
40608	607	Under replenish switch	
40609	608	Under max replenish times	
40610	609	Replenish valid time	
40611	610	Replenish invalid time	
Formula parameters – Free Fall correction parameters			
40612	611	Free Fall correction Switch	
40613	612	Free Fall correction Times	
40614	613	Free Fall correction Range	
40615	614	Free Fall correction Amplitude	
Recipe parameters – Jog Fine Feed			
40616	615	Fine Feed Jog	

		switch	
40617	616	Jog valid time	
40618	617	Jog invalid time	
40619-40650	618-649	Reserved	
Recipe parameters – Gross scale parameters			
40651	650	Delay before re-feeding	
Peripheral parameter - feeding and discharging timeout judgment parameter			
41051	1050	Feed and discharge judgment switch	
41052	1051	Coarse feed timeout time	
41053	1052	Medium feed Overtime time	
41054	1053	Fine feed timeout time	
41055	1054	discharging timeout time	
Motor parameters - feeding mode			
41402	1401	Feeding mode	
41403	1402	Feed gate closing timeout	
41404	1403	Motor feed reverse logic switch	
41406	1405	Feed stepper motor frequency	
41407	1406	Minimum pulse number of feed motor	Default 1300, range 1-60,000
41409	1408	Maximum number of pulses for the feed motor	Default 13000, range 1-60000
41413	1412	Feed gate switch motor rotation direction signal status	
41414	1413	Starting frequency of the	5000

		feeding motor	
41415	1414	Feed motor Acceleration time	50
41416	1415	Feed motor deceleration time	50
41417	1416	The running time when the feeding gate is opened to the coarse feeding position	
41418	1417	The running time when the feeding gate is opened to the medium feeding position	
41419	1418	The run time when the feed gate is opened to the fine feeding position	
41420	1419	Clamp bag mode	
41421	1420	Loose bag timeout time	
41422	1421	Clamp bag timeout time	
41423	1422	Motor clamp bag anti-logic switch	
41424	1423	Clamp Bag frequency	
41425	1424	Loose bag frequency	
41426-41427	1425-1426	The number of pulses required for the motor to change from loose bag state to clamp bag state	
41428	1427	Signal state of motor rotation direction when clamping bag	
41429	1428	Starting frequency of	

		clamping bag motor	
41430	1429	Clamp bag motor Acceleration time	
41431	1430	Clamp bag motor deceleration time	
41432	1431	Release bag time	
41433	1432	Discharging mode	
41434	1433	Discharging gate timeout	
41435	1434	Discharging gate opening timeout time	
41436	1435	Motor discharge reverse logic switch	
41437	1436	Discharge limit real-time detection switch	
41438	1437	Discharge open gate motor frequency	
41439	1438	Discharge close gate motor frequency	
41440-41441	1439-1440	The number of pulses required for the motor to switch from off state to on state	
41442	1441	Signal state of motor rotation direction when the motor opens the gate and discharges	
41443	1442	Discharge motor starting frequency	
41444	1443	Acceleration time of discharge motor	

41445	1444	Deceleration time of discharge motor	
41446	1445	Discharging motor gate opening signal output time	
41447	1446	feeding motor power back to zero frequency	
41448-41600	1447-1599	Reserved	
Communication parameters - Serial Port 1 Parameter (485)			
41601	1600	ID number	
41602	1601	Communication method	
41603	1602	Baud Rate	
41604	1603	Data format	
41605	1604	High-low byte	
Communication Parameters – Serial Port 2 Parameters(232)			
41606	1605	ID number	
41607	1606	Communication method	
41608	1607	Baud Rate	
41609	1608	Data format	
41610	1609	High-low byte	
Communication Parameters - Ethernet parameters			
41611	1610	High and low bytes	
41612	1611	Port number	
41613	1612	IP	
41614	1613		
41615	1614		
41616	1615		
41617-41700	1616-1699	Reserved	
IO Custom parameters			
41701	1700	IO input port 1 Definition	Default 1 Start
41702	1701	IO input port 2 Definition	Default 2 E-Stop

41703	1702	IO input port 3 Definition	Default 3 Pause
41704	1703	IO input port 4 Definition	Default 10 Manual Coarse feed
41705	1704	IO input port 5 Definition	Default 9 Manual Fine feed
41706	1705	IO input port 6 Definition	Default 5 Zero
41707	1706	IO input port 7 Definition	
41708	1707	IO input port 8 Definition	Default 6 Clear alarm Default 8 Clear total accumulations
41709	1708	IO input port 9 Definition	Default 0 undefined
41710	1709	IO input port 10 Definition	Default 0 undefined
41711	1710	IO input port 11 Definition	Default 7 Clamp/loose bag
41712	1711	IO input port 12 Definition	Default 23 charging gate closed in place
41713	1712	IO output port 1 Definition	Default 1 Run
41714	1713	IO output port 2 Definition	Default 2 Stop
41715	1714	IO output port 3 Definition	Default 3 Coarse feed
41716	1715	IO output port 4 Definition	Default 4 Medium feed
41717	1716	IO output port 5 Definition	Default 5 Fine feeed
41718	1717	IO output port 6 Definition	Default 7 WAIT Status
41719	1718	IO output port 7 Definition	Default 15 Alarm
41720	1719	IO output port 8 Definition	Default 14 Lack material
41721	1720	IO output port 9 Definition	Default 17 batch completed
41722	1721	IO output port 10 Definition	Default 6 Clamp bag
41723	1722	IO output port 11 Definition	Default 20 Feed motor direction signal

41724	1723	IO output port 12 Definition	Default 19 Feed motor pulse signal
41725	1724	IO output port 13 Definition	Default 0 undefined
41726	1725	IO output port 14 Definition	Default 0 undefined
41727	1726	IO output port 15 Definition	Default 0 undefined
41728	1727	IO output port 16 Definition	The default 0 is undefined
41729	1728	Start/Stop IO test	
41730	1729	Input IO test	
41731 to 41732	1730-1731	Output IO test	
41732-41800	1732-1799		
Other parameter Settings			
41801	1800	0	Read as 0 write 1, print total cumulative
41802	1801	Print recipe accumulations	Read as 0 write 100, print the current recipe accumulation write 1-20, print the corresponding recipe accumulation. write 101, print all recipes
41803	1802	Print user accumulations	Read as 0 write 100, print the current user accumulation write 0-9, print the corresponding user accumulation write 101, print all users to accumulation
41804	1803	Reset to factory setting	8800 All parameters (including calibration) 8801 All parameters (excluding calibration) 8802 Reset recipe parameters 8803 Reset system and communication parameters 8804 Reset peripheral parameters 8805 Reset motor parameters 8806 Reset calibration 8807 Reset IO Setting 8808 Reset auxiliary logic parameters, Read return 0.
41805	1804	Parameter backup	Write 9900 to perform a parameter backup, Write 9901 to perform a restore backup, and write 9902 to perform a delete backup

41806-41807	1805-1806	Backup date	Read Only
41808-41809	1807-1808	Backup time	
41810	1809	year	
41811	1810	month	
41812	1811	day	
41813	1812	hour	
41814	1813	minute	
41815	1814	second	
41816	1815	Clear total cumulative	Write 1 to clear the total accumulation
41817	1816	Clear Recipe Accumulations	Write 1-20 to clear the corresponding accumulations. Write 100 to clear the current recipe accumulations. Write 101 to clear all recipe accumulations
41818	1817	Clear User Accumulations	Write 0-9. Clear the accumulated data of the corresponding user. Clear the accumulated data of the current user. Clear the accumulated data of all users
Batch Settings			
41951	1950	Batch	
41952	1951	Remaining batches	
Recipe target value			
42001-42002	2000-2001	Recipe 1 Target value	
42003-42004	2002-2003	Recipe 2 Target value	
42005-42006	2004-2005	Recipe 3 Target value	
42007-42008	2006-2007	Recipe 4 Target value	
42009-42010	2008-2009	Recipe 5 Target value	
42011-42012	2010-2011	Recipe 6 Target value	
42013-42014	2012-2013	Recipe 7 Target value	
42015-42016	2014-2015	Recipe 8 Target value	
42017-42018	2016-2017	Recipe 9 Target value	
42019-42020	2018-2019	Recipe 10 Target	

		value	
42021-42022	2020-2021	Recipe 11 Target value	
42023-42024	2022-2023	Recipe 12 Target value	
42025-42026	2024-2025	Recipe 13 Target value	
42027-42028	2026-2027	Recipe 14 Target value	
42029-42030	2028-2029	Recipe 15 Target value	
42031-42032	2030-2031	Recipe 16 Target value	
42033-42034	2032-2033	Recipe 17 Target value	
42035-42036	2034-2035	Recipe 18 Target value	
42037-42038	2036-2037	Recipe 19 Target value	
42039-42040	2038-2039	Recipe 20 Target value	
Cumulative weight			
42041-42042	2040-2041	Total cumulative weight high 6 bit	
42043-42044	2042-2043	Total cumulative weight low 9 bit	
42045-42046	2044-2045	Total cumulative packet number	
42047 to 42048	2046-2047	Recipe 1 Cumulative weight high 6 bit	
42049-42050	2048-2049	Recipe 1 Cumulative weight low 9 bit	
42051-42052	2050-2051	Recipe 1 Cumulative batches	
……			
42161-42162	2160-2161	Recipe 20 Cumulative weight high 6 bit	
42163-42164	2162-2163	Recipe 20	

		Cumulative weight low 9 bit	
42165-42166	2164-2165	Recipe 20 cumulative batches	
User accumulates weight and batches			
42167-42168	2166-2167	User 0 Cumulative weight high 6 bit	
42169 to 42170	2168-2167	User 0 Cumulative weight low 9 bit	
42171-42172	2170-2171	User 0 Cumulative batches	
……			
42221 to 42222	2220-2221	User 9 Cumulative weight high 6 bit	
42223-42224	2222-2223	User 9 cumulative weight low 9 bit	
42225-42226	2224-2225	User 9 Cumulative batches	
Default Motor opening steps sheet			
42301	2300	Interval segment 0- Coarse feed	0-1000 corresponds to 0-100%
42302	2301	Interval segment 0- Medium feed	0-1000 corresponds to 0-100%
42303	2302	Interval segment 0- Fine feed	0-1000 corresponds to 0-100%
42304	2303	Interval segment 1- Coarse feed	0-1000 corresponds to 0-100%
42305	2304	Interval segment 1- Medium feed	0-1000 corresponds to 0-100%
42306	2305	Interval segment 1- Fine feed	0 to 1000 corresponds to 0 to 100%
42307	2306	Interval segment 2- Coarse feed	0-1000 corresponds to 0-100%
42308	2307	Interval segment	0-1000 corresponds to 0-100%

		2- Medium feed	
42309	2308	Interval segment 2- Fine feed	0-1000 corresponds to 0-100%
42310	2309	Interval segment 3- Coarse feed	0-1000 corresponds to 0-100%
42311	2310	Interval segment 3- Medium Feed	0-1000 corresponds to 0-100%
42312	2311	Interval segment 3- Fine Feed	0-1000 corresponds to 0-100%
42313	2312	Interval segment 4- Coarse Feed	0-1000 corresponds to 0-100%
42314	2313	Interval segment 4- Medium Feed	0 to 1000 corresponds to 0 to 100%
42315	2314	Interval segment 4- Fine Feed	0-1000 corresponds to 0-100%
42316	2315	Interval segment 5- Coarse Feed	0-1000 corresponds to 0-100%
42317	2316	Interval segment 5- Medium Feed	0-1000 corresponds to 0-100%
42318	2317	Interval segment 5- Fine Feed	0-1000 corresponds to 0-100%
Internal use			
48001	8000	User ID	
48002	8001	Restart flag	
48003	8002	Status change	
48004	8003	Manual Coarse-feed	
48005	8004	Manual Fine-feed	
48006	8005	Manual Discharge	
48007-48008	8006-8007	Once batch complete flag bit	
48009	8008	Timer lock switch	
48014	8013	Write 9900 to perform parameter backup, write 9901 to perform restore backup, write 9902 to	

		perform delete backup	
48015-48016	8014-8015	Backup date	
48017-48018	8016-8017	Backup time	
Compile information			
49001-49002	9000-9001	Back-end version number	
49003 to 49004	9002-9003	Back-end compile date	
49005-49006	9004 to 9005	Back-end compile time	
49007-49008	9006-9007	Append version number	
49101	9100	MAC1	Not open to customers
49102	9101	MAC2	
49103	9102	MAC3	
49104	9103	MAC4	0x90-0x9F
49105	9104	MAC5	0x00-0xFF
49106	9105	MAC6	0x00-0xFF
Coil address			
1	0	Start	
2	1	E-Stop	
3	2	Slow Stop	
4	3	Pause	
5	4	Zero	
6	5	Clear alarm	
7	6	Clamp/loose bag	
8	7	Select recipe	
9	8	Manual Fine Feed	
10	9	Manual Coarse feed	
11	10	Manual Discharge	
12	11	Manual Empty material	
13	12		
14	13		
15	14		
16	15		

17	16		
18	17		
19	18		
20	19	Clear reserve information	
21	20	Manual Medium feed	
81	80	Clear current user accumulation	
82	81	Clear all user accumulation	
83	82	Clear current recipe accumulation	
84	83	Clear all recipe accumulation	
85	84	Clear total accumulation	
101	100	Reset all parameters	
102	101	Reset calibration parameters	
103	102	Reset work parameters	
104	103	Reset Recipe parameters	
105	104	Reset Peripheral parameters	
106	105	IO parameter	
107	106	Reset Motor parameter	
108	107		
109	108	Perform parameter backup	
110	109	Restore backup parameters	
111	110	Delete backup parameters	
Coil IO test			
151	150	IO test switch	Enter the IO test when writing 1; Exit when writing 0. Not writable when running
152	151	when Input port 1	

		is valid, read as **1**; **0** if invalid.	
153	152	If input port 2 is valid, read as **0**; **0** if invalid.	
154	153	Input port 3 is read as **1** when valid; **0** if in valid.	
155	154	When input port 4 is valid, read as **1**; **0** if invalid.	
156	155	If input port 5 is valid, read as **1**; **0** if invalid.	
157	156	If input port 6 is valid, read as **1**; **0** if invalid.	
158	157	Input port 7 is valid, read as **1**; **0** if in valid.	
159	158	When input port 8 is valid, read as **1**; **0** if invalid.	
160	159	Input port 9 is valid read as **1**; **0** if in valid.	
161	160	If input port 10 is valid, read as **1**; **0** if invalid.	
162	161	Input port 11 is valid, read as **1**; **0** if invalid.	
163	162	If input port 12 is valid, read as **1**; **0** if invalid.	
164	163	When writing 1, output port 1 is valid; When writing 0, output port 1 is invalid.	
165	164	When writing 1, output port 2 is	

		valid; When writing 0, output port 2 is invalid.	
166	165	When writing 1, output port 3 is valid; When writing 0, output port 3 is invalid.	
167	166	When writing 1, output port 4 is valid; When writing 0, output port 4 is invalid.	
168	167	When writing 1, output port 5 is valid; When writing 0, output port 5 is invalid.	
169	168	When 1 is written, output port 6 is valid. When writing 0, output port 6 is invalid.	
170	169	When writing 1, output port 7 is valid; When writing 0, output port 7 is invalid.	
171	170	When writing 1, output port 8 is valid; When writing 0, output port 8 is invalid.	
172	171	When writing 1, output port 9 is valid; When writing 0, output port 9 is invalid.	
173	172	When writing 1, output port 10 is valid; When writing 0, output	

		port 10 is invalid.	
174	173	When writing 1, output port 11 is valid; When writing 0, output port 11 is invalid.	
175	174	When writing 1, output port 12 is valid; When writing 0, output port 12 is invalid.	
176	175	When writing 1, output port 13 is valid; When writing 0, output port 13 is invalid.	
177	176	When writing 1, output port 14 is valid; When writing 0, output port 14 is invalid.	
178	177	When writing 1, output port 15 is valid; When writing 0, output port 15 is invalid.	
179	178	When writing 1, output port 16 is valid; When writing 0, output port 16 is invalid.	

8. Product Dimension