GENERAL MEASURE

杰 • 曼 • 科 • 技

# GMC-X904_D

# User Manual

**110612100003**

**V02.00.00**

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 www.gmweighing.com

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

CE

**Contents**

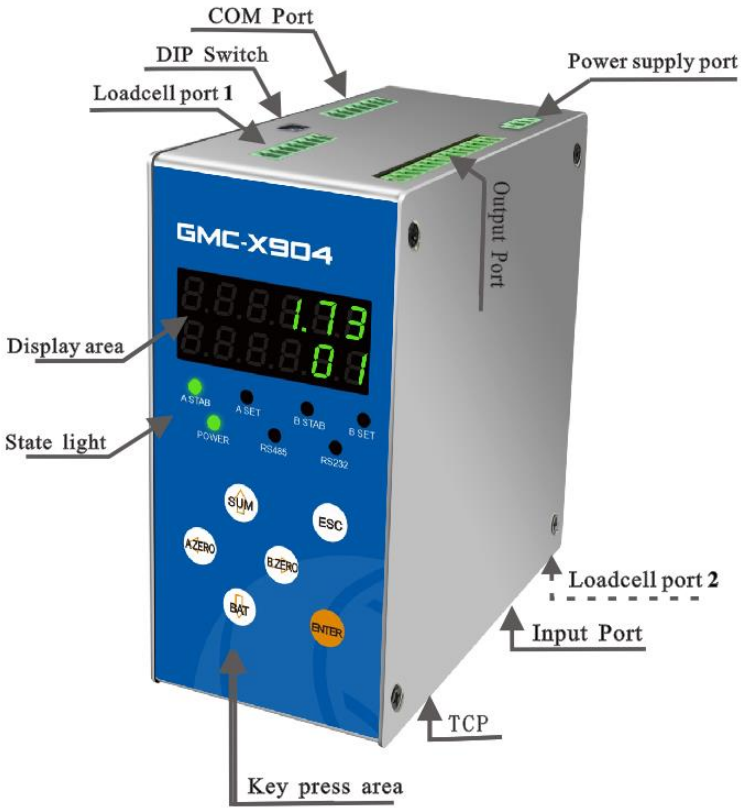
# 1. Overview

**GMC-X904D Packing** controller is a new type of load control instrument specially developed for automatic quantitative packing scale with double scale increment method. The new algorithm makes the weighing control faster and more accurate; Dual serial ports make it easier for devices to interconnect. It can be widely used in feed, chemical, grain and other industries that need quantitative packaging equipment.

## 1.1 Functions and features

| | | |
|---|---|---|
| Shell Type | DIN Rail mounted, stainless steel housing | |
| Display | Double row **6-bit** display nixie tube | |
| Language | Chinese and English are supported | |
| Port | Loadcell interface | Support **2 6-wire** analog load cell weighing platform interface, connect up to 8 350 Ω sensors per channel |
| | **1** way **485** interface | Support **modbus RTU,** continuous mode, print mode, etc |
| | **1** way **232** interface | |
| | Transistor I/O interface | **12** in **16** out Transistor I/O interface, the position of the input and output ports can be customized |
| | Dual network ports | Supports **TCP-IP** protocol communication |
| Function Description | ➢ Support a variety of scale body mode switching, there is a bucket, no bucket, bulk mode. Users can choose independently<br>➢ Rich switching interface, with testing function, convenient packaging scale debugging<br>➢ Automatic double speed, three speed feeding control, with point feeding function<br>➢ Can store 20 kinds of recipe, convenient packaging of different range materials<br>➢ Filling control function, convenient packaging scale and front-end feeding equipment control connection<br>➢ Feed speed adaptive function<br>➢ Automatic drop correction function<br>➢ Batch number setting function<br>➢ Support a variety of peripheral functions, such as bag patting, coding, sewing machine, conveyor, unloading vibration and so on<br>➢ Automatic zero tracking function<br>➢ Multiple digital filtering function<br>➢ Dual serial port for external serial printer, computer or second monitor<br>➢ With double network port communication function, easy to communicate with the host computer<br>➢ Support filling, discharging and locking/unlocking bag motor mode control function | |

## 1.2 Panel Description




## Status indicator Instructions:

**A STAB:** when the weight of **A** scale is stable, the indicator lights up;
**A SET:** when the parameters of A scale are set, the indicator lights up;
**B STAB:** when the weight of B scale is stable, the indicator lights up;
**B SET:** when B scale is set, the indicator lights up;
**POWER**: when the instrument is powered on, the indicator is steady on;
**RS485**: During the RS485 communication, the indicator blinks**.**
**RS232**: The indicator blinks during **RS232** communication.

## Dip switch instructions:

Dip switch: communication mode switch, when the dip switch to the user direction **(**near the serial port), the instrument according to the user set protocol and format for data communication. To the Default **e**nd (near the sensor end), the instrument is fixed by pressing 38400, 8-N-1, MODBUS-RTU for data communication.


## Button description:

| Keys | Function description |
|---|---|
| SUM | Scroll up/Toggle options/Current input value +**1** |
| | Short press this key on the home screen to view the number of batches and total accumulated weight |

| | |
|---|---|
| | Press and hold on the home screen to clear the cumulative |
|  | Scroll down/Toggle options/Current Input value **-1** |
| | Hold down this key for 2 seconds on the home screen to set the number of batches |
| | Short press this key on the home screen to view the number of batches and the number of remaining batches |
|  | The left Page Turn/Left scroll key is used to switch between menu items |
| | Clear key, used to clear the weight of A scale that meets the clear range and is stable |
|  | The right flip/right scroll key is used to switch between menu items |
| | The reset key is used to reset the weight of B scale that meets the reset range and is stable |
|  | Exit key, used to exit the current operation of the instrument/return to the previous level menu key. |
|  | The Confirm key, which determines the input/confirm options |
| | Access menu |

## 1.3 Technical Specifications

### **1.3.1** General Specifications

Power source: DC24V

Power filter: included

Working temperature: -10 ~ 40℃

Max humidity:90% R.H. No condensation

Power consumption: about 15W

Physical dimensions:**61*132*126**mm

### **1.3.2** Analog part

Sensor power supply：DC 5V 125mA(MAX)

Input resistance: 10MΩ

Zero adjustment range: 0.002 ~ 15mV (when the sensor is 3mV/V)

Input sensitivity: 0.1uV/d

Input range:0.02~15mV

Conversion method: Sigma-Delta

A/D conversion speed:120.240,480,960 times/second

Non-linear: 0.01% F.S

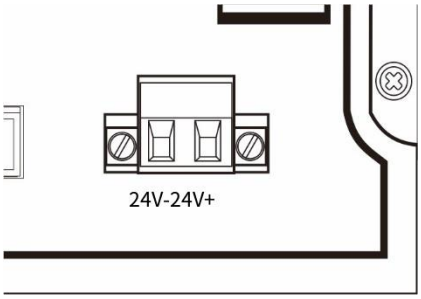
Gain drift: 10PPM/ °C

Maximum display accuracy: 1/100000

# 2. Install wiring

## 2.1 Power Connection

**The GMC-X904D** package controller uses **24V** DC power supply. The connection is shown below:




Power terminal diagram:

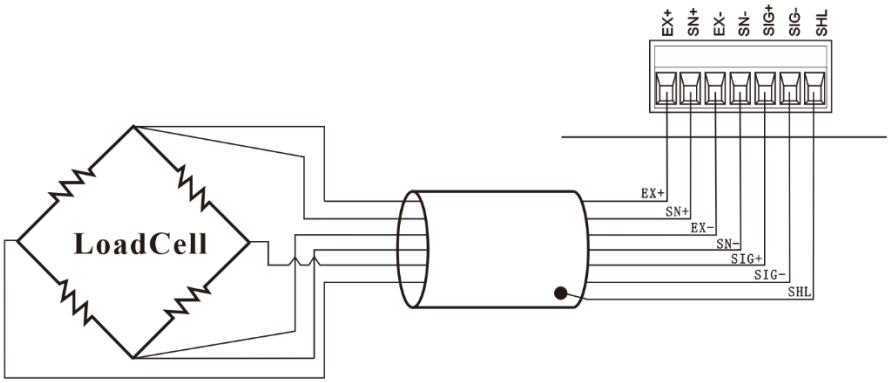
24V+ connects to DC positive, 24V- connects to DC negative.

Note: This product uses DC 24V power supply, using AC 220V power supply will permanently damage the instrument,and danger!!

## 2.2 Connection of the sensor

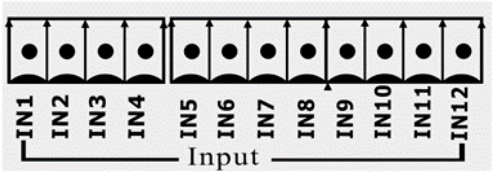
The **GMC-X904D** packaging controller can be connected to two resistance strain bridge sensors. When a four-wire sensor is selected, the SN+ of the sensor must be short-circuited with the EX+, and the SN- must be short-circuited with the EX-.

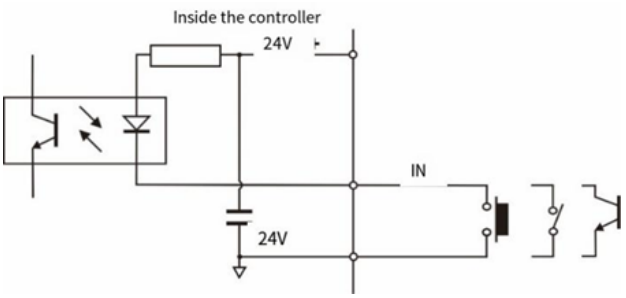
| port | EX+ | SN+ | EX- | SN- | SIG+ | SIG- | SHL |
|---|---|---|---|---|---|---|---|
| Six-wire | Power positive | Sensing positive | Power negative | Sensing negative | Signal positive | Signal negative | Shielded wire |
| Four-wire | Power positive | | Power negative | | Signal positive | Signal negative | Shielded wire |



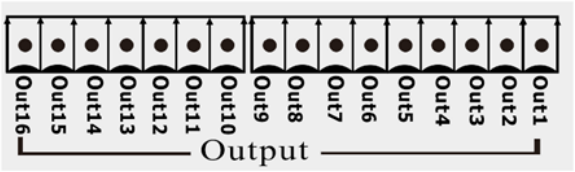

## 2.3 Connection of the switching quantity interface

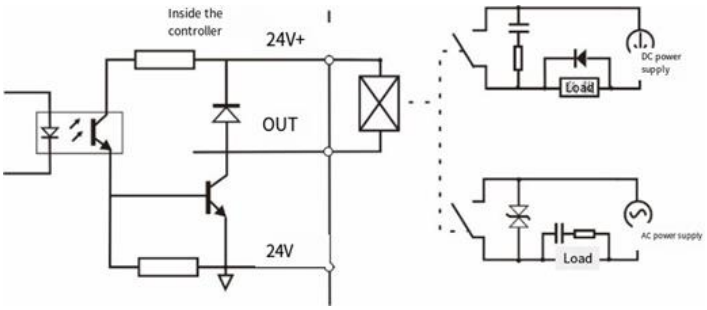
**The GMC-X904D** packing controller contains **28** switching input and output controls **(12** in **/16** out). Adopt photoelectric isolation mode, the instrument internal power drive. The IO input of the instrument is effective at low level; Output transistor collector open output mode, each drive current up to 200mA, full load current up to 3A. The terminal connection is shown in the following figure:




IO input interface diagram



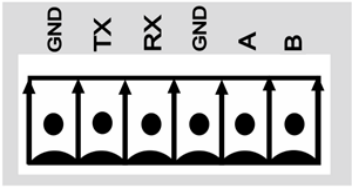




IO output interface diagram

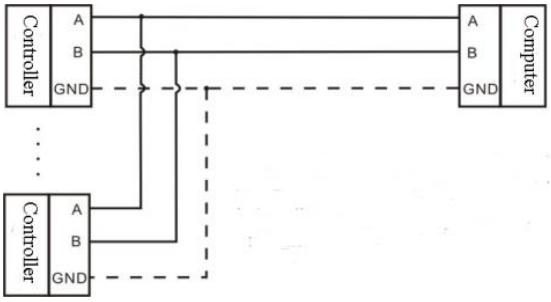
GMC-X904D packing controller IO for the user can be customized, in order to facilitate the user wiring and some special applications, IO content refer to Chapter 3.9.

## 2.4 Serial port connection

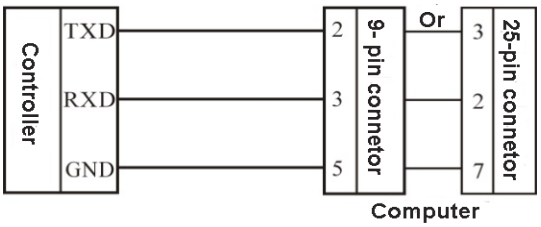
GMC-X904D can provide two serial communication interfaces, as shown in the following figure. RS-232 mode (terminal TX, RX, GND) and RS-485 (terminal A, B, GND). Serial port support: MODBUS protocol, continuous mode and print format, etc.




Instrument and computer connection diagram:




Instrument and computer connection diagram (RS-485 mode)




Instrument and Host computer connection diagram (RS-232mode)

2.4.1 Troubleshooting Serial Port Faults

If the serial port is not communicating, check:

- Check the connection according to the serial port connection; Make sure the connection is correct.

  The RS232 interface must be connected to all three wires, Rx, Tx, GND.

  The RS485 interface must be connected to A and B wires.

- Ensure that the parameters of the connection port are consistent with those of the host.

  Slave ID, baud rate, data format and communication protocol must be consistent with the host computer and PLC.

## 2.5 Network Port Connection

The product supports common network port communication and supports **Modbus** TCP network port protocol. Dual network port option, network port built-in switch, easy to cascade. The network port parameters must be set in Modbus address zone **1100** to **1105** (**4x1101** to **4x1106**). For details, see the chapter 5.3.3 of MODBUS Address Assignment table.

**2.5.1** Troubleshooting Network Port Faults

If the network port is not communicating, check:

○ Check network port indicators.

The hardware connection is normal, and the internal indicator of the instrument is steady on.

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

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

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

○ Check whether IP conflicts exist.

○ Restart the instrument.

# 3. Parameter Description

## 3.1 Calibration Scale Parameters (CAL)

Set the weight parameters and calibrate the instrument. Calibration is instrument calibration, the first use of **GMC-X904D** packaging controller or any part of the weighing system has changed and the current equipment calibration parameters can not meet the user's requirements, should be calibrated controller, calibration parameters directly affect the instrument weighing results.

Calibration parameters MODBUS address range is **0050~0080** (**4x0051~4x0081**), see the chapter 5.3.3 of MODBUS Address Assignment table.

| Symbols | Parameters | Instructions |
|---|---|---|
| **Unit** | Unit | Initial value: **kg**; **g/kg/t/lb** four options are available. |
| **Point** | Decimal point | Initial value: **0.00; 0 to** 0.0000 **five options available.** |
| **Div** | Minimum division | Initial value: **1**; **1/2/5/10/20/50** Six options available. |
| **CAP** | Maximum range | Initial value: **100.00**; The range is less than or equal to the minimum index ×**100000** can be set |
| **SE out** | Millivolt output | Read out the millivolts of the sensor currently displayed |
| **A Zero** | **A** scale zero calibration | Empty the scale table, display the zero millivolt, press the button ENTER to carry out zero calibration on the scale **A**. |
| **A Load** | Weight calibration | Load the weights, display the relative millivolts after loading, press the button ENTER to complete and calibrate with the current relative millivolts gain. |
| **B Zero** | **B** scale zero calibration | Empty the scale table, display zero millivolts, press the button ENTER for zero calibration of **B** scale. |
| **B Load** | Weight calibration | Similarly, load the weights on **B** scale, display the gain millivolts after loading the weights, press the button ENTER to confirm, prompt "SUCC", you can complete the calibration process. |

### 3.1.1 Zero point calibration

Calibrate the instrument, first carry out zero calibration, carry out zero calibration operation on A scale and B scale respectively.

| | |
|---|---|
|  | **A** scale zero calibration interface; Press ENTER to enter the display of the current millivolt, and press ENTER complete the zero calibration when the scale is stable. |
|  | **B** Scale zero calibration interface; Press ENTER to enter the display of the current millivolt, and press ENTER complete the zero calibration when the scale is stable. |

3.1.2 Gain calibration

After the zero point calibration is completed, enter the gain calibration interface, load the weight to the scale, and input the weight value of the weight when the scale is stable. Press the button to complete the gain calibration.

| | |
|---|---|
|  | **A** scale gain calibration interface; Press ENTER to enter the calibration interface, load weights on the scale platform of **A**, at this time, the first row is displayed as the gain millivolts, and enter the weight value of weights in the second row. |
|  | **B** scale gain calibration interface; Press ENTER to enter the calibration interface, load the weights on the **B** scale platform, at this time, the first row is displayed as the gain millivolts, and enter the weight value in the second row. |

## 3.2 Recipe Parameters (REC)

It is used to set the parameters related to the packaging weight value, including quantitative parameters, quantitative time parameters, over and under parameters, drop correction parameters, adaptive parameters, slow point dynamic parameters and the setting parameters corresponding to different weighing modes.

| Number | Parameters | Initial values | Instructions |
|---|---|---|---|
| **F1.1** | Recipe ID | **1** | Set the current recipe number. Range: **1 to 40**. |
| **F2.1** | Target values | **0** | Quantitative target value. |
| **F2.2** | **A** Scale target value | **0** | Set the target value of scale **A** separately |
| **F2.3** | **B** Scale target value | **0** | Set the target value of the scale **B** separately |
| **F2.4** | Zero zone values | **0.00** | In the process of quantification, if the weighing value is less than the zero zone value, then start the unloading delay timer. Range: **0**~ maximum measuring range. |
| **F2.5** | Adaptive switch | **0** | Adaptive function, open the switch after the operation process automatically adjust the instrument fast, medium and slow lead and ban time.<br>Optional range: **0-**off, **1-** double speed, **2-** three speed.<br>(Note: 1. The drop correction and adaptive function cannot be turned on at the same time. If the adaptive function is turned on, the drop correction function must be turned off.<br>2. When the first scale is self-adaptive, it must ensure that the scale body is stable and the current weight is zero) |
| **F2.6** | Adaptive Level | **3** | The lower the grade, the faster the feeding speed and the relative reduction in accuracy.<br>Range: **1 to 5**. |
| **F2.7** | Parameter update switch | **OFF** | When turned on, the change value of the fast, medium and slow lead is updated to the quantitative parameter value; When off, the quantitative parameter value cannot be updated. ON and OFF are optional |
| **F3** | Set the A scale quantitative parameters | | |

| | | | |
|---|---|---|---|
| **F3.1** | **A** Scale Co-Fi remain | **0.00** | During the quantitative process, if the weighing value is ≥ the target value - fast increase the lead amount, then turn off the fast increase. Range: **0~** maximum measuring range. |
| **F3.2** | **A s**cale Me-Fi remain | **0.00** | In the quantification process, if the weighing value is ≥ the target value - add the leading amount, then close the adding. Range: **0~** maximum measuring range. |
| **F3.3** | **A** scale Free Fall | **0.00** | In the quantification process, if the weighing value is ≥ the target value - the drop value, the slow addition is turned off. Range: **0~** maximum measuring range. |
| **F3.4** | **A s**cale COMP.Inhibit.Time(Co-F) | **900** | At the beginning of the ration, during this time, in order to avoid overshooting without weight judgment, fast add is always effective. Range: **0~9999**. (Unit: ms**)** |
| **F3.5** | **A** scale COMP.Inhibit.Time(Me-F) | **900** | After the end of the fast addition, during this time, in order to avoid overshooting without weight judgment, the addition has been effective. Range: 0**~999.** (Unit: ms) |
| **F3.6** | **A** scale COMP.Inhibit.Time(Fi-F) | **900** | After the end of adding, during this time, in order to avoid overshooting without weight judgment, slow adding is always effective. Range: 0 to **9999.** (Unit :ms) |
| **F4** | Set the B scale quantitative parameters | | |
| **F4.1** | **B** Scale Co-Fi remain | **0.00** | During the quantitative process, if the weighing value is ≥ the target value - fast increase the lead amount, then turn off the fast increase. Range: **0~** maximum measuring range. |
| **F4.2** | **B s**cale Me-Fi remain | **0.00** | In the quantification process, if the weighing value is ≥ the target value - add the leading amount, then close the adding. Range: **0~** maximum measuring range. |
| **F4.3** | **B** scale Free Fall | **0.00** | In the quantitative process, if the weighing value is greater than the target value - the drop value, the slow loading is turned off. Range: **0~** maximum measuring range. |
| **F4.4** | **B s**cale COMP.Inhibit.Time(Co-F) | **900** | At the beginning of the ration, during this time, in order to avoid overshooting without weight judgment, fast add is always effective. Range: **0~9999**. (Unit: ms**)** |
| **F4.5** | **B** scale COMP.Inhibit.Time(Me-F) | **900** | After the end of the fast addition, during this time, in order to avoid overshooting without weight judgment, the addition has been effective. Range: 0**~999.** (Unit: ms) |
| **F4.6** | **B** scale COMP.Inhibit.Time(Fi-F) | **900** | After the end of adding, during this time, in order to avoid overshooting without weight judgment, slow adding is always effective. Range: 0 to **9999.** (Unit :ms) |
| **F5** | Set the quantitative time parameter values | | |
| **F5.1** | Delay before feeding | **0.5** | In the metering bucket mode, at the beginning of the quantitative process, after this delay time, the instrument is judged stable and cleared (if it does not meet the conditions of the clearance interval, it is not |

| | | | |
|---|---|---|---|
| | | | judged stable and not cleared), and then the feeding process begins;<br>In no metering bucket mode, after the bag is completed, after this delay time, the instrument is judged to remove the skin. Range: **0.0~99.9**. (Unit :**s**) |
| **F5.2** | Result waiting Time | **1.0** | When the setting mode is selected as "delay setting", after the slow feeding is closed (or the over-under-error is opened, the over-under-error alarm is finished), the setting is started. After this holding time, the setting is considered to be over, and the next process is entered.<br>Range: **0.0~99.9**. (Unit :**s**) |
| **F5.3** | Discharging delay time | **0.5** | In the unloading process, when the weight value of the weigher is less than the zero zone value, start this delay, and turn off the unloading signal at the end of the delay. Range: **0.0~99.9**. (Unit :**s**) |
| **F5.4** | Discharge interlock time | **0.5** | In bucket combination mode, the unloading interval time value of **A** and **B** scales.<br>Range: **0.0~99.9**. (Unit :**s**) |
| **F5.5** | Bracket up delay | **0.0** | In no bucket mode, execute this delay after the rise signal is issued.<br>Range: **0.0 to 99.9**. (unit **s**)**.** |
| **F5.6** | Bracket down delay | **0.0** | In no bucket mode, start the quantitative delay after it ends.<br>Range: **0.0 to 99.9.** (Unit **s**) |
| **F5.7** | Delay after pinch loose bag | **0.5** | After giving the bag clamping signal, after this delay, the instrument judges that the bag clamping action is completed. Range: **0.0~99.9**. (Unit :**s**) |
| **F5.8** | Delay before bag unlock | **0.5** | After the discharge of bucket mode, the output loose bag signal through this delay time;<br>No bucket mode setting (bag shot) after the completion, through this delay output loose bag signal. Range: **0.0~99.9**. (Unit :**s**) |
| **F5.9** | Effective blanking level delay | **4.0** | No bucket mode is effective, A scale bag after the detection of the material level effective start feeding, in the time B scale also bag, then even if the material level is invalid then B scale should start feeding. Range: **0.0~99.9**. (Unit :**s**) |
| **F6** | Used to set parameters related to overshoot and undershoot alarm reminders | | |
| **F6.1** | Over and under detection ON/OFF | **OFF** | "ON/OFF" is optional. When this parameter is set to "ON", the quantitative process performs overshoot and undershoot judgment. |
| **F6.2** | Over/Under pause ON/OFF | **OFF** | "ON/OFF" is optional. When it is set to "ON", the meter will pause and wait for the user to handle when the quantitative process exceeds or underperforms.<br>Switch quantity input emergency stop, return to the stop state, and clear the alarm; Or switch quantity input clear alarm, alarm clear continue the quantitative process. |

| | | | |
|---|---|---|---|
| **F6.3** | Over and under alarm time | **1.0** | When the alarm is not manually cleared, after the alarm time is set, the alarm of overshoot and undershoot will close by itself. Range: **0.0 ~ 99.9. (**Unit s) |
| **F6.4** | Over value | **0.00** | In the quantitative process, if the weighing value is ≥ the target value + the excess value, it is judged as the excess value. Initial value: **0**. |
| **F6.5** | Under value | **0.00** | In the quantitative process, if the weighing value is less than the target value - underdifference value, it is judged as underdifference. Initial value: **0**. |
| **F6.6** | Supplement material ON/OFF | **OFF** | Set the undergap feed judge switch. ON: When the underdifference is insufficient, the feed is output slowly according to the feed times, and the parameters of F3.7~F3.9 can be seen. OFF: no feeding when underdifference occurs. |
| **F6.7** | Supplement material times | **1** | When the quantitative process is judged to be underweight, slow feeding is carried out according to this value. Range **1 to 99**. |
| **F6.8** | Effective supplement time | **0.5** | When feeding output, within a on-off cycle, slowly increase the effective time**.** Range: **0.0 ~ 99.9** (unit **s**). |
| **F6.9** | Ineffective supplement time | **0.5** | When feeding output, within a on-off cycle, slowly increase the effective time**.** Range: **0.0 ~ 99.9** (unit **s**). |
| **F7.1** | Free fall correction ON/OFF | **OFF** | The drop value is the weight value that does not fall into the measuring bucket after turning off the slow adding signal. The drop correction is according to the actual blanking value as required. "ON/OFF" is optional. When this parameter is set to "ON", the quantification process carries out the drop correction.<br>(Note: drop correction and adaptive function cannot be turned on at the same time. If you want to turn on the drop correction, ensure that the adaptive function is not turned on.) |
| **F7.2** | Correction sampling times | **1** | The meter will be set the number of times of the drop value of the average of the average, as the basis for the correction of the drop. Range: **1 ~ 99.** |
| **F6.3** | Free fall correction range | **2.0** | When the value of this drop exceeds the set range, this drop will not be counted in the arithmetic average range. Range: **0.0 to 9.9.** (Percentage of target value) |
| **F7.4** | Free fall correction magnitude | **1-50%** | The magnitude of each drop correction; Three ranges of 0-100%, 1-50%, 2-25% are optional. |
| **F8.1** | Quick feed mode ON/OFF | **OFF** | "ON/OFF" is optional, and if you set it to "ON", the meter turns on the fast mode function. |
| **F8.2** | Fast mode time | **50** | Fast mode cutoff time. Range: **0 to 999**. (in **ms**) |
| **F8.3** | Fast Mode Weight A | **0.00** | Fast Mode cutoff weight value. Range: **0~** maximum range |
| **F8.4** | Number of quick mode correct | **5** | Use quick mode to automatically correct times. Range: **0 to 9** |
| **F8.5** | Fast Mode Stabilization time | **100** | Steady scale time of the meter after the fast mode function is turned on.<br>Range: **0** to **999**. (in ms) |

| | | | |
|---|---|---|---|
| **F8.6** | Fast Mode Weight B | **0.00** | Fast Mode cutoff weight value. Range: **0**~ maximum range |

## 3.3 Peripheral Parameters (Perip)

The instrument is equipped with peripheral control functions such as patting bag, sewing bag, unloading vibration, conveyor, coding, etc. The MODBUS address range of peripheral parameters is **0250~0297** (**4x0251~4x0298**), see the chapter 5.3.3 the MODBUS address assignment table.

3.3.1 Patting bag parameters **(P1)**

| No. | Parameters | Initial values | Instructions |
|---|---|---|---|
| **P1** | Set the patter bag parameters. | | |
| **P1.1** | Patting Bag Mode | **PoFF** | Bag mode selection: **PoFF** (no bag)/ **P-d**(**bag after setting value)**/ **PF-** (**bag in feeding)**/ **PFd**(bag after setting value in feeding);<br>Note: With bucket mode only ①**PoFF** (no shooting bag) /**P-d**(shooting bag after setting value) optional; ②**PLC** mode is not optional. |
| **P1.2** | Pat bag starting weight | **0** | No bucket, ton bag, valve scale mode is effective, select the feeding in the bag mode, when the feeding in the bag, the current weight must be greater than or equal to the starting weight of the bag, to start the bag. Range: **0**~ maximum measuring range. |
| **P1.3** | Pat times in filling | **0** | Set the parameter of the number of patting bags in the feed, set to **0**, no patting bags. Note: When the feed process enters the slow feed, force the end of the feed in the bag, regardless of whether the feed in the bag is completed. (Do not fill the middle slap bag after entering the small cast) The number of times that the initial weight of the slap bag corresponds to the slap bag. Range: **0 to 99**. |
| **P1.4** | Pat times after valuing | **4** | Set the parameter, the number of bag shots after setting the value.<br>(Note: the patting bag mode is the patting bag after the fixed value, and the parameters of the patting bag after the fixed value in the feeding are visible) range: **0~99**. |
| **P1.5** | Pat bag before delay | **0.5** | After the racket bag is started, the racket bag output is effective after this delay time.<br>Range**: 0.0~99.9**. (Unit **s**) |
| **P1.6** | Pat bag effective time | **0.5** | Beat bag within a on-off cycle, beat bag output effective time.<br>Range: **0.0~99.9**. (Unit **s**) |
| **P1.7** | Pat bag ineffective time | **0.5** | Beat bag within a on-off cycle, beat bag output invalid time.<br>Range**: 0.0~99.9**. (Unit **s**) |
| **P1.8** | Extra pat bag effective time | **0.0** | Generally used in pier bag function.<br>(Note: The patting bag mode is the patting bag after the fixed value, and the parameters of the patting bag after the fixed value in the feeding are visible)<br>After the end of all the bags, add an additional bag output, the effective time is the set time of the value, and the invalid time is the "bag invalid time**"**.<br>Range**: 0.0 to 99.9**. (Unit **s**) |

| | | | |
|---|---|---|---|
| | | | (Note: The time of release bag delay startup remains unchanged, or start the "delay before release bag" time after the effective end of all the original slap bag output, that is, start the additional slap bag output effective time after the end of the effective time. In order to achieve the pier bag function, the time and the "loosening bag delay" time should be appropriately set, but the time setting should generally be greater than the "loosening bag delay", that is, the bag is loosened first after the bag pier goes down, and then the pier bag mechanism rises again). |

3.3.2 Coding parameters **(P2)**

| No. | Parameters | Initial values | Instructions |
|---|---|---|---|
| **P2** | Used to set parameters related to coding. | | |
| **P2.1** | Code ON/OFF | **OFF** | **ON**/**OFF** Optional**,** set to "ON"**,** the instrument has the function of coding output. |
| **P2.2** | Code start delay | **0.5** | Bag is completed, the output is valid after this delay coding.<br>Range: **0.0~99.9**. (Unit **s**) |
| **P2.3** | Code effective time | **0.5** | Code effective time. Range: **0.0 to 99.9**. (Unit **s**) |
| **P2.4** | Feed/discharge switches are not allowed when coding | OFF | ON/OFF optional; Set to "ON" to enable the feed (no bucket mode) output or discharge (with bucket mode) output during coding. |

3.3.3 Conveyor Parameters **(P3)**

| No. | Parameters | Initial values | Instructions |
|---|---|---|---|
| **P3** | Used to set parameters related to conveyor configuration. | | |
| **P3.1** | Conveyor mode | **OFF** | Optional**: OFF**, **ON**, set to ON to turn on the conveyor output function. |
| **P3.2** | Conveyor starting delay | **0.5** | After this delay after loosening the bag, the instrument judges that the conveyor is started.<br>Range: **0~99.9**. (Unit **s**) |
| **P3.3** | Conveyor running time | **4.0** | Conveyor run time Settings. Range: **0~99.9**. (Unit **s**) |
| **P3.4** | **B** scale delay start feed time | **2.0** | No bucket combination mode, **B** scale again feed delay. This function is only effective for B **scale**, to prevent the problem that the bag under the bag will hold the charging bag after the bag is added immediately. Range: 0**~99.9.** (Unit s**)** |

3.3.4 Parameters of the sewing machine **(P4)**

| No. | Parameters | Initial values | Instructions |
|---|---|---|---|
| **P4** | Used to set parameters related to the sewing machine. | | |
| **P4.1** | Sewing machine | **ON** | ON/OFF optional; Set to "ON" to turn on the |

| | | | |
|---|---|---|---|
| | ON/OFF | | seaming function. |
| **P4.2** | Sewing machine start delay | **0.5** | After the sewing machine start switch is effective, start the sewing machine delay time. Range: **0.0~99.9**. (Unit **s**) |
| **P4.3** | Sewing machine output time | **4.0** | After the delay time arrives, start the output of the sewing machine and continue to output the output time of the sewing machine. Range: **0.0~99.9.** (Unit **s**) |
| **P4.4** | Cutter start delay | **0.5** | After the end of the output time of the sewing machine, start the cutting machine start delay time, and continue the cutting machine start delay time. Range **0.0~99.9** (unit **s**) |
| **P4.5** | Cutter output delay | **0.5** | After the start of the cutter, start the output of the cutter and continue the output delay time of the cutter. Range: **0.0~99.9**. (Unit **s**) |
| **P4.6** | Delay before stopping the sewing machine | **0.5** | After the work of the cutting machine is completed, the sewing machine continues to work, and the delay time before the sewing machine stops will be stopped. Range: **0.0~99.9.** (Unit **s**) |
| **P4.7** | Sewing machine to shake time | **0.3** | Prevent the photoelectric jitter of the startup of the sewing machine from causing the sewing machine to work abnormally. During the shaking time, the sewing machine will jitter photoelectric, but the output of the sewing machine is still effective at this time. Range: **0.0~99.9.** (Unit **s**) |

3.3.5 Discharging Vibration Parameters **(P5)**

| No. | Parameters | Initial values | Instructions |
|---|---|---|---|
| **P5** | Used to set discharge vibration related parameters. | | |
| **P5.1** | Discharge vibration ON/OFF | **OFF** | ON/OFF optional; Set to "ON" to turn on the discharge vibration function. Discharging vibration can be divided into independent vibration and unloading door vibration. |
| **P5.2** | Effective discharge time | **2.0** | After the discharge vibration switch is opened, the effective discharge time is the period from the beginning of the output discharge signal to the completion of the discharge start discharge delay. When the discharge exceeds the effective discharge time, the discharge vibration function will be performed. Range **0.0 to 9.9**. (Unit **s**) |
| **P5.3** | Effective time of discharge vibration | **0.5** | Range **0.0 to 9.9**. (unit **s**). |
| **P5.4** | Unloading vibration ineffective time | **0.5** | Range **0.0 to 9.9**. (Unit **s**) |
| **P5.5** | Vibration times of discharge | **10** | Range **0 to 99**. |

3.3.6 Auxiliary Pulse Parameters **(P6)**

| No. | Parameters | Initial values | Instructions |
|---|---|---|---|
| **P6** | Used to set auxiliary pulse related parameters. | | |

| | | | |
|---|---|---|---|
| **P6.1** | Auxiliary pulse switch | **ON** | ON/OFF optional; Set it to "ON" to turn on the auxiliary pulse function. |
| **P6.2** | Auxiliary Pulse **1** Perform total time | **0** | Auxiliary Pulse **1** Perform the total time. If it is **0**, the loop will continue. Initial value: **0**; Range :**0.0 to 999.9**. (Unit **s**) |
| **P6.3** | Auxiliary pulse **1** effective time | **10.0** | Range :**0.0 to 999.9**. (Unit **s**) |
| **P6.4** | Auxiliary Pulse **1** Ineffective time | **10.0** | Range :**0.0 to 999.9**. (Unit **s**) |
| **P6.5** | Auxiliary pulse **2** Perform total time | **0.0** | Auxiliary pulse **2** Perform total time. If it is **0**, execute all the time. Range: **0.0 to 999.9**. (Unit **s**) |
| **P6.6** | Auxiliary pulse **2** Effective time | **10.0** | Range :**0.0 to 999.9**. (Unit **s**) |
| **P6.7** | Auxiliary pulse **2** Ineffective time | **10.0** | Range :**0.0 to 999.9**. (Unit **s**) |
| **P6.8** | Auxiliary pulse **3** Perform total time | **0** | Auxiliary pulse **3** Perform total time. If it is **0**, execute all the time. Range :**0.0 to 999.9**. (Unit **min**) |
| **P6.9** | Auxiliary pulse **3** Effective time | **10.0** | Range :**0.0 to 999.9**. (Unit **min**) |
| **P6.10** | Auxiliary pulse **3** Ineffective time | **10.0** | Range :**0.0 to 999.9**. (Unit **min**) |
| **P6.11** | Auxiliary pulse **4** Perform total time | **0** | Auxiliary pulse **4** Perform total time. If it is **0**, execute all the time. Range :**0.0 to 999.9**. (Unit **min**) |
| **P6.12** | Auxiliary pulse **4** Effective time | **10.0** | Range :**0.0 to 999.9**. (Unit **min**) |
| **P6.13** | Auxiliary pulse **4** Ineffective time | **10.0** | Range :**0.0 to 999.9**. (Unit **min**) |

## 3.4 Working Parameters (Setup)

| No. | Parameter | Initial value | Instructions |
|---|---|---|---|
| **b1** | Set basic weighing related parameters, such as clear zero range, such as clear zero range, stability, etc. | | |
| **b1.1** | Automatic Zeroing after power-on | **OFF** | ON/OFF is optional. If this parameter is set to ON, the meter will be automatically cleared after it is powered on (the weight in the scale bucket meets the clearance range). |
| **b 1.2** | Zero Range | **50** | Zeroable range. Range: **1 to 99** (percentage of full scale). |
| **b1.3** | Stable range | **2** | During the stabilization time, the weight change range within this setting value is judged to be stable. Range: **0 ~ 99(d)**. |
| **b1.4** | Stable time | **0.3** | Range: **0.1 to 9.9**. (Unit **s**) |
| **b1.5** | Zero point tracking tange | **0** | Weight value within this range, the meter automatically displays zero. Zero tracking is not performed when it is 0. The value ranges **from 0 to** |

| | | | |
|---|---|---|---|
| | | | **9(d)**. |
| **b 1.6** | Zero point tracking time | **2.0** | Range: **0.1 to 99.9** (unit **s**) |
| **b1.7** | Digital filter rating | **7** | **AD** digital filter parameters: **7**: no filter; **9**: the strongest filtering effect. Range: **0 to 9** |
| **b1.8** | Secondary filtering level | **0** | Secondary filtering based on digital filtering. Range: **0 to 9.** |
| **b1.9** | **A/D** sampling rate | **240** | **A/D** sampling rate, **120** times/s, **240** times/s, **480** times/s, **960 times**/s optional. |
| **b2** | Set the setting method, filtering level and other parameters. | | |
| **b2.1** | PreFill Zero Interval | **0** | How many times to complete the packaging process for one zeroing. Enter the running state when the first packaging process, the instrument is not cleared. Range: **0 ~ 99** (Note: This parameter is only valid for bucket packaging mode) |
| **b2.2** | Result Check Mode | **1** | **0-** Judge the stable value: After the slow feed is turned off, the weight is stable and the setting process is completed.<br>**1-** Delay setting: After the slow feeding is closed, the setting process is completed after the fixed value holding time. |
| **b2.3** | Result Hold switch | **OFF** | ON/OFF optional; Set to "ON", the weight of the meter is fixed and maintained at the fixed weight after setting, and the real-time weight is displayed when the weight of the discharge (loose bag) is less than half the target value. |
| **b2.4** | Manual DISC To ACUM switch | **OFF** | ON/OFF optional; Set to "ON" and the manual unloading weight value is added to the cumulative value. |
| **b2.5** | Manual discharge judge pinch loose bag switch | **OFF** | When the bucket mode is stopped, set to "ON". When manually unloading, it is necessary to judge the bag pinch signal switch and allow unloading after the bag pinch.<br>Note: Double bucket double bag **AB** independent, double bucket double bag **AB** combination mode, the manual discharge judgment bag release switch is opened, and the bag status of A scale and **B scale are respectively detected during discharge.** |
| **b2.6** | No bucket packaging mode | **Net** | Gross/Net packing (Net) optional;<br>Net weight packaging mode At the beginning of quantification, the tare is cleared first, and the quantitative packaging process is carried out with the net weight value. |
| **b2.7** | Dynamic filter switch | **ON** | ON/OFF optional; During the packaging process, whether to filter the operation switch, set "ON", |

| | | | |
|---|---|---|---|
| | | | the following parameters are effective; |
| **b2.7.1** | Feed filter grade | **4** | Filtering parameters in the feeding process: **9**: the strongest filtering effect. Range: **0** ~ **9**. |
| **b2.7.2** | Result check Filter | **7** | Filtering parameters in the setting process: **9**: the strongest filtering effect. Range: **0** ~ **9**. |
| **b2.7.3** | Discharge filter grade | **3** | Filtering parameters in the unloading process: **9**: the strongest filtering effect.<br>Range: **0** ~ **9**. |
| **b3** | Set the scale body structure, feed control and other parameters. | | |
| **b3.1** | Scale structure | **binyes** | **binyes** (with bucket scale)/ **bin no** (without bucket scale)/ bulk(bulk scale)/**PLC** optional. Set the corresponding parameters according to the different scale body structure. |
| **b3.2** | Working mode | **0** | **0**: **AB** double scale (with bucket)<br>**1**: Separate **A** scale (with bucket, without bucket, bulk material)<br>**2**: Separate **B** scale (with bucket, without bucket, loose material)<br>**3**: Double bucket double pocket **AB** independent (with bucket)<br>**4**: Double bucket double pocket **AB** combination (with bucket)<br>**5**: **AB** independent (no bucket)<br>**6**: **AB** combination (no bucket)<br>**7**: **AB** stand alone (bulk)<br>**8**: **AB combination (bulk)** |
| **b3.3** | The AB target value is switched separately | **OFF** | **ON (ON)** : **A** and **B** target values are set separately; **OFF**: target values are shared |
| **b3.4** | Feeding method | **1** | **Sin-** separate feeding: fast time large feeding port feed; Feed in the feeding port when adding; Slow time small feeding port feed.<br>Co-combined feeding: fast feeding large, medium and small feeding ports at the same time; When adding medium and small feeding port at the same time; Slow feed small feed port. |
| **b3.5** | No bucket double scale unclock Bag mode | **OFF** | Bag loosening mode optional: OFF **(OFF)**, simultaneous bag loosening normal mode **(On1)**, simultaneous bag loosening fast mode **(On2)**.<br>**ON 1**: Loose bag Normal mode<br>For example, one scale has completed the feeding of the other scale has not completed the feeding of the other scale, waiting for the completion of the two scales to loosen the bag at the same time.<br>If a scale has been completed after feeding, the |

| | | | |
|---|---|---|---|
| | | | other scale is not in the bag (feeding) state, then do not wait for another scale, the scale directly loose the bag.<br>**ON 2**: Fast mode of bagging<br>The default **A** scale in this mode is in the front and **B** scale in the back. For example, **A** balance will not judge whether **B** is completed after feeding, and directly loosen the bag.<br>After the completion of the feeding, B should judge whether A is in the state of bag clamping (feeding) : if **A** is feeding**, B** should wait for **A to** loosen the bag at the same time after adding; If **A is** not feeding, B does **not need to wait for the bag to be loosened directly.**<br>OFF: disables this function<br>**Note**: After this switch is turned on, the meter will not control the conveyor to start and stop. The external conveyor should be in operation at all times.<br>If this switch is on and the pier bag function is enabled at the same time (**F5.6** is **not** set to 0), the last beat bag output needs **to** wait for the AB scale to output at the **same time**, and then loosen the bag at the same time. [ON2 **Mode A** scale first **completes** first pier bag release] |
| **b3.6** | Hopper Capacity | **0.0** | The bucket mode is valid, the maximum weight value of the weighing bucket is calculated with the target value |
| **b3.7** | Manual Unlock Bag | **OFF** | **ON**/**OFF** (optional); Set to "**ON**", running, you need to manually control the loose bag. Initial value: OFF **(OFF)**. |
| **b3.8** | Allow loose bag switch in operation | **OFF** | **ON**/**OFF** (optional); Set to "**ON**", no bucket mode, feeding, you need to manually control the loose bag.<br>Initial value: OFF **(OFF)**. (Note: No bucket **AB** combination mode, this parameter and manual bag release switch can not be opened at the same time) |
| **b3.9** | Flow window length | **3** | That is, the number of samples to calculate the current flow value. The value ranges **from 1 to 6**. |
| **b3.10** | Host discharge interlock switch | **OFF** | When set to **ON** indicates the main machine when multi-scale discharge interlock, **OFF** indicates the slave machine when multi-scale discharge interlock. The main machine controls the unloading from the slave machine. |

## 3.5 Motor Parameters (Motor)

"Feed mode", Clamp/loose bag mode " and "Discharge mode" can select the motor mode

and set the corresponding motor parameters. The **MODBUS** address area of motor parameters is **1000~1076**（**4x1001~4x1077**）, see the chapter 5.3.3 the MODBUS address assignment table.

3.5.1 Charging Motor Parameters (U2)

| No. | Parameters | Initial values | Instructions |
|---|---|---|---|
| **U1** | | | |
| **U1.1** | Current recipe ID | 01 | Initial value: **01**; Range: **01** to **40** |
| **U1.2** | The number of the power unit used for this recipe | 0 | Initial value: **0**; Range: **0** to **4** |
| **U2** | Set the feed motor mode parameters | | |
| **U2.1** | Feeding mode | **Air** | Optional: **Air**/**motor1**/**motor2 1** Stepper motor feed; **2**, ordinary motor mod |
| **U2.2** | Filler Gate Close Overtime | **4.0** | Range: **0.0** to **99.9(s)** |
| **U2.3** | Feed door closed in place signal type | **0** | Optional: **0/1**(in place if it works/in place if it doesn't) |
| **U2.4** | Feeding motor number | **0** | **0** ~ **4** |
| **U2.5** | A scale feeding motor frequency | **12000** | Range: **1** to **50000(Hz)** |
| **U2.6** | A Scale Power-On Go 0 Pos. Freq | **2000** | Range: **1** to **50000(Hz)** |
| **U2.7** | A Scale off to fine flow of pulses required | **1800** | Range: **1** to **60,000 (Hz)** |
| **U2.8** | A Scale off to medium flow of pulses required | **4300** | Range: **1** to **60,000 (Hz)** |
| **U2.9** | A scale off to coarse flow of pulses required | **7750** | Range: **1** to **60,000 (Hz)** |
| **U2.10** | A scale open door rotation direction signal status | **0** | Optional: **0/1**(direction signal output is invalid when the feeding door is opened/direction signal output is valid when the feeding door is opened) |
| **U2.11** | B Scale feeding motor frequency | **12000** | Range: **1** to **50000(Hz)** |
| **U2.12** | B scale Power-On Go 0 Pos. Freq | **2000** | Range: 1 to **50000(Hz)** |
| **U2.13** | B Scale off to fine flow of pulses required | **1800** | Range: **1** to **60,000 (Hz)** |
| **U2.14** | B Scale off to medium flow of pulses required | **4300** | Range: **1** to **60,000 (Hz)** |
| **U2.15** | B Scale off to coarse flow of pulses required | **7750** | Range: **1** to **60,000 (Hz)** |
| **U2.16** | B Scale open door rotation direction signal status | **0** | Optional: **0/1**(direction signal output is invalid when the feeding door is opened/direction signal output is valid when the feeding door is opened) |
| **U2.17** | A Scale feed motor start frequency | **2000** | Range: 1 to **50000(Hz)** (this value cannot be greater than the **A** scale |

| | | | |
|---|---|---|---|
| | | | charging motor frequency) |
| **U2.18** | A Scale feed motor acceleration time | **200** | Range: **0** to **9999(ms)** |
| **U2.19** | A Scale feed motor deceleration time | **50** | Range: **0** to **9999(ms)** |
| **U2.20** | B Scale feed motor start frequency | **2000** | Range: **0** to **50000(Hz)** (this value cannot be greater than the **B** scale charging motor frequency) |
| **U2.21** | B Scale feed motor acceleration time | **200** | Range: **0** to **9999(ms)** |
| **U2.22** | B Scale feed motor deceleration time | **50** | Range: **0** to **9999(ms)** |
| **U2.23** | A scale coarse flow opening time | **0.8** | Range: **0~99.99(s)** |
| **U2.24** | A scale medium flow opening time | **0.4** | Range: **0~99.99(s)** |
| **U2.25** | A Scale fine flow opening time | **0.2** | Range: **0~99.99(s)** |
| **U2.26** | B Scale coarse flow opening time | **0.8** | Range: **0~99.99(s)** |
| **U2.27** | B Scale medium flow opening time | **0.4** | Range: **0~99.99(s)** |
| **U2.28** | B Scale fine flow opening time | **0.2** | Range: **0~99.99(s)** |
| **U2.29** | Feeding does not require a switch in place | **OFF** | Range: OFF **(OFF)**, **ON (ON**) |
| **U2.30** | A scale feed more pulses count | **100** | Range: **1** to **60,000 (Hz)** |
| **U2.31** | B scale feed more pulses count | **100** | Range: **1** to **60,000 (Hz)** |

3.5.2 Bag locked/unlocked parameters **(**U3)

| No. | Parameters | Initial values | Instructions |
|---|---|---|---|
| **U3** | Set the clip loose bag motor mode parameters | | |
| **U3.1** | Clamp bag mode | **Air** | Optional: **1**. Stepper motor clip loose bag; **2**. Motor double limit clip loose bag; **3**. Motor single limit clip loose bag. **Air** / **motor1** / **motor2** / **motor3** |
| **U3.2** | Loose bag process timeout | **3.0** | Range: **0** to **99.9**(s) |
| **U3.3** | Clamp bag process timeout | **3.0** | Range: **0** to **99.9**(s) |
| **U3.4** | Bag locked/unlocked in place signal type | **0** | Optional: **0/1**(in place if it works/in place if it doesn't) |
| **U3.5** | **A** Scale clamp bag frequency | **30000** | Range: **1** to **50000(Hz)** |
| **U3.6** | **A** Scale loose bag frequency | **20000** | Range: **1** to **50000(Hz)** |
| **U3.7** | A scale Power-On Go 0 | **2000** | Range: **1** to **50000(Hz)** |

| | | | |
|---|---|---|---|
| | Pos. Freq | | |
| **U3.8** | **A** Scale the number of pulses needed to clip the bag | **12000** | Range: **1** to **60,000 (Hz)** |
| **U3.9** | **A** Scale clamper DIR signal type | **0** | Optional: **0/1**(direction signal output is invalid when bag is added/direction signal output is valid when bag is added) |
| **U3.10** | **B** Scale clamp bag frequency | **30000** | Range: **0** to **50000(Hz)** |
| **U3.11** | **B** Scale loose bag frequency | **20000** | Range: **0** to **50000(Hz)** |
| **U3.12** | **B** scale Power-On Go 0 Pos. Freq | **2000** | Range: **0** to **50000(Hz)** |
| **U3.13** | **B** Scale the number of pulses needed to clip the bag | **12000** | Range: **1** to **60,000 (Hz)** |
| **U3.14** | **B** Scale clamper DIR signal type | **0** | Optional: **0/1**(direction signal output is invalid when bag is held/direction signal output is valid when bag is held) |
| **U3.15** | **A** Scale clamp bag motor starting frequency | **2000** | Range: **0** to **50000(Hz)** (this value cannot be greater than the **A** scale pocket frequency) |
| **U3.16** | **A** Scale clamp bag motor acceleration time | **200** | Range: **0** to **9999(ms)** |
| **U3.17** | **A** Scale clamp bag deceleration time | **50** | Range: **0~9999(ms)** |
| **U3.18** | **B** Scale clamp bag motor start frequency | **2000** | Range: **0** to **50000(Hz)** (this value cannot be greater than the **B** scale pocket frequency) |
| **U3.19** | **B** Scale clamp bag motor acceleration time | **200** | Range: **0** to **9999(ms)** |
| **U3.20** | **B** Scale clamp bag motor deceleration time | **50** | Range: **0** to **9999(ms)** |
| **U3.21** | Loose bag opening effective time | **0.5** | Range: **0~99.99(s)** |
| **U3.22** | Loose bag does not require a in place switch | **OFF** | Range: OFF **(OFF)**, **ON (ON**) |
| **U3.23** | **A** scale loose bag for extra pulse count | **100** | Range: **1** to **60,000 (Hz)** |
| **U3.24** | **B** scale loose bag for extra pulse count | **100** | Range: **1** to **60,000 (Hz)** |

3.5.3 Discharge parameters **(U4)** Valid in bucket mode)

| No. | Parameters | Initial value | Instructions |
|---|---|---|---|
| **U4** | Set the discharge motor mode parameters | | |
| **U4.1** | Discharging mode | **Air** | Optional: Pneumatic mode **(Air)**; Stepper motor discharge **(motor1)**; Motor single limit discharge **(motor2)**; Motor double limit discharge **(motor3)**; Motor unidirectional rotation discharge **(motor4)**. |

| | | | |
|---|---|---|---|
| **U4.2** | Discharging and closing timeout | **3.0** | Range: **0.0** to **99.9(s)** |
| **U4.3** | Discharging door timeout | **3.0** | Range: **0.0** to **99.9(s)** |
| **U4.4** | Discharging position signal type | **0** | Optional: **0/1**(in place if it works/in place if it doesn't) |
| **U4.5** | Discharge real-time detection switch | **OFF** | **ON**/**OFF** optional; Set to "OFF", the instrument does not need to always detect the discharge of the position signal, only need to run each time when the feeding test can be detected once the limit signal is detected, there is no need to detect the limit signal again; Set to "ON", real-time detection of the discharge motor is in the limit, if not, shield the feeding output, and alarm prompt, until the limit is detected before resuming the feeding. |
| **U4.6** | **A** Scale discharging opening frequency | **30000** | Range: **0** to **50000(Hz)** |
| **U4.7** | **A** scale discharging closing frequency | **20000** | Range: **0** to **50000(Hz)** |
| **U4.8** | A scale power back to zero frequency | **2000** | Range: **0** to **50000(Hz)** |
| **U4.9** | **A** scale the number of pulses required for discharge | **12000** | Range: **1** to **60,000 (Hz)** |
| **U4.10** | **A** scale discharge direction signal | **0** | Optional: **0/1**(in place if it works/in place if it doesn't) |
| **U4.11** | **B s**cale discharging opening frequency | **30000** | Range: **0** to **50000(Hz)** |
| **U4.12** | **B** scale discharging closing frequency | **20000** | Range: **0** to **50000(Hz)** |
| **U4.13** | **B** power back to zero frequency | **2000** | Range: **0** to **50000(Hz)** |
| **U4.14** | **B** scale the number of pulses required for discharge | **12000** | Range: **1** to **60,000 (Hz)** |
| **U4.15** | **B** scale discharge direction signal | **0** | Optional: **0/1**(in place if it works/in place if it doesn't) |
| **U4.16** | **A** scale discharge motor start frequency | **2000** | Range: **0** to **50000(Hz)** (this value cannot be greater than the unloading frequency of **A** scale) |
| **U4.17** | **A** scale discharging motor acceleration time | **200** | Range: **0** to **9999(ms)** |
| **U4.18** | **A** scale discharging motor deceleration time | **50** | Range: **0** to **9999(ms)** |
| **U4.19** | **B** Scale discharge motor start frequency | **2000** | Range: **0** to **50000(Hz)** (this value cannot be greater than the discharge frequency of **B** scale) |
| **U4.20** | **B** Scale discharge motor acceleration time | **200** | Range: **0** to **9999(ms)** |
| **U4.21** | **B** Scale discharge | **50** | Range: **0** to **9999(ms)** |

| | | | |
|---|---|---|---|
| | motor deceleration time | | |
| **U4.22** | **A** scale discharge door output effective time | **1.0** | Range: **0~99.99(s)** |
| **U4.23** | **B** scale discharge door output effective time | **1.0** | Range: **0~99.99(s)** |
| **U4.24** | Discharging does not require a switch in place | **OFF** | Range: OFF **(OFF)**, **ON (ON)** |
| **U4.25** | **A** scale discharge more pulses | **100** | Initial value:; Range: **1** to **60,000 (Hz)** |
| **U4.26** | **B** Scale discharge extra pulse count | **100** | Initial value: **100**; Range: **1** to **60,000 (Hz)** |

## 3.6 Communication Parameters (COM)

GMC-X904D provides two serial communication interfaces. Serial port outputs are defined in **Section 2.4**. Set the port parameters correctly for communication.

**The MODBUS** address range for serial port communication **ranges from 0300 to 0309** (**4x0301 to 4x0310**). The following table describes the parameters. For network port communication parameters**,** the MODBUS address range is **1100 to 1111** (**4x1101 to 4x1112**). For details, see the chapter 5.3.3 the MODBUS address assignment table.

| No. | parameter | Initial value | State |
|---|---|---|---|
| **RS-232** | Set **RS-232** communication parameters, including baud rate, communication protocol data format, etc., and print parameters. | | |
| **c1.1** | Slave ID | **1** | **1 to 99** Optional. |
| **c1.2** | Protocol | **0** | **0- Modbus-RTU**/**1-** Print /**2-** Continuous Mode /**3- Re-ContA** /**4- Re-ContB** Optional. |
| **c1.3** | Baud rate | **38400** | **9600/19200/38400/57600/115200** is optional. |
| **c1.4** | Data format | **8-E-1** | Data bit **-** Parity check **-** stop bit; **8-E-1/8-N-1/7-E-1/7-N-1** Optional. |
| **c1.5** | **Modbus** High-low word | **AB-CD** | **Modbus** communication display mode **AB-CD** (high character in front)/ **CD-AB** (low character in front) Optional. |
| **RS-485** | Set **RS-485** communication parameters, including baud rate, communication protocol data format, etc., and print parameters. | | |
| **c2.1** | Slave ID | **1** | **1 to 99** Optional. |
| **c2.2** | Protocol | **0** | **0- Modbus-RTU**/**1-** Print /**2-** Continuous Mode /**3- Re-ContA** /**4- Re-ContB** Optional. |
| **c2.3** | Baud rate | **38400** | **9600/19200/38400/57600/115200 is** optional. |
| **c2.4** | Data format | **8-E-1** | Data bit **-** Parity check **-** stop bit; **8-E-1/8-N-1/7-E-1/7-N-1** Optional. |
| **c2.5** | **Modbus** High-low word | **AB-CD** | **Modbus** communication display mode **AB-CD** (high character in front)/ **CD-AB** (low character in front) Optional. |

## 3.7 Resetting Parameters (Reset)

| symbol | Parameters | State |
|---|---|---|

| | | |
|---|---|---|
| **Reset All** | Reset all parameters | Show **Yes** and press the button to restore all parameter values of the meter to their factory Settings. |
| **Reset Setup** | Reset working parameters | Show **Yes** and press the button ENTER to restore the meter working parameter value to the factory setting value. |
| **Reset CAL** | Reset calibration parameters | Show **Yes** and press the button ENTER to restore the meter calibration parameter value to the factory setting. |
| **Reset Rec** | Reset recipe parameters | Show **Yes** and press the button ENTER to restore the meter recipe parameter values to their factory Settings. |
| **Reset Per** | Reset peripheral parameters | Show **Yes** and press the button ENTER to restore the meter peripheral parameter values to their factory Settings. |
| **Reset io** | Reset IO quantity parameter | Show **Yes**, press the button ENTER, restore the meter switch quantity define parameter value to the factory setting value. |
| **Reset Motor** | Reset motor parameters | Show **Yes** and press the button ENTER to restore the meter motor parameter values to the factory Settings. |
| **Reset Logic** | Reset the auxiliary logic parameters | Show **Yes** and press the button ENTER to restore the meter logic programming parameter values to their factory Settings. |

## 3.8 System Parameters (Sys)

| Symbols | Parameters | State |
|---|---|---|
| **Sys Time** | System time | View and set the time, year, month, and hour of the current system. |
| **Sys Ver1** | Background version | Check the time of the background version of the system. |
| **Sys Ver2** | Foreground version | Check the time of the foreground version of the system. |
| **Sys IO Ver** | IO version | View the system IO version. |
| **Sys Bac** | Parameter backup | Show **Yes** and press the button ENTER to perform the parameter backup operation. |
| **Sys Rld** | Restore Parameter backup | Displays the time of the backup parameters and presses the button ENTER to restore the backup parameters. |

| | | |
|---|---|---|
| **Sys Pwd** | Password switch | Set password switch, set to ON, then modify the parameter such as enter the correct password (initial password **000000**). Initial value: **OFF**; |

## 3.9 IO module (IO)

**The GMC-X904D** provides **12** input **and 16** output interfaces to **connect the** instrument to external devices. Among them: **OUT12, OUT13, OUT14, OUT15, OUT16** can be selected as high-speed **IO** control (**PWM**) output.

The **b3.1** item in the working parameters of the scale structure is not the same, the corresponding input and output outlet factory definitions are different, the content is as follows (output **1-16** corresponds to the instrument **OUT1**~OUT16 interface, input **1-12** corresponds to the instrument **IN1**~**IN12** interface),

The default definition of a bucket scale:

| **Output (O def)** | | **Amount of input (I def)** | |
|---|---|---|---|
| **Out1** | **1-** Run | **IN1** | **1-** Start |
| **Out2** | **2-** Stop | **IN2** | **2-** Emergency stop |
| **Out3** | **3-** Scale A Coarse Flow | **IN3** | **4-** Scale A zero |
| **Out4** | **4-** Scale A Medium Flow | **IN4** | **5-** Scale B zero |
| **Out5** | **5-** Scale A Fine Flow | **IN5** | **9-**Scale A manual discharge |
| **Out6** | **6-** Scale B Coarse Flow | **IN6** | **10-**Scale B manual discharge |
| **Out7** | **7-** Scale B Medium Flow | **IN7** | **6-**Bag locked/unlocked request |
| **Out8** | **8-** Scale B Fine Flow | **IN8** | **16-** Clear alarm |
| **Out9** | **10-** Scale A value | **IN9** | **11-A** Manual slow add |
| **Out10** | **13-** Scale B value | **IN10** | **12-B** Manual slow add |
| **Out11** | **11-** Scale A discharge | **IN11** | **15-** Select recipes |
| **Out12** | **14-** Scale B discharge | **IN12** | **3-** Slow stop |
| **Out13** | **9-** Scale A bag locked | | |
| **Out14** | **15-** Scale A pat bag | | |
| **Out15** | **23-** Alarm | | |
| **Out16** | **25-** Over | | |

No-Bucket scale Default definition:

| **Output (O def)** | | **Amount of input (I def)** | |
|---|---|---|---|
| **Out1** | **1-** Run | **IN1** | **1-** Start |
| **Out2** | **2-** Stop | **IN2** | **2-** Emergency stop |
| **Out3** | **3-** Scale A Coarse Flow | **IN3** | **3-** Slow stop |
| **Out4** | **4-** Scale A Medium Flow | **IN4** | **4-** Scale A zero |
| **Out5** | **5-** Scale A Fine Flow | **IN5** | **5-** Scale B zero |
| **Out6** | **6-** Scale B Coarse Flow | **IN6** | **6-**Bag locked/unlocked request |
| **Out7** | **7-** Scale B Medium Flow | **IN7** | **7-** Scale B bag locked/unlocked request |
| **Out8** | **8-** Scale B Fine Flow | **IN8** | **29-**Scale A manual fill (level) |
| **Out9** | **10-** Scale A value | **IN9** | **30-** Scale B manual fill (level) |
| **Out10** | **13-**Scale B value | **IN10** | **11-** Scale A manual Fine Flow |
| **Out11** | **9-** Scale A bag locked | **IN11** | **12-** Scale B manual Fine Flow |
| **Out12** | **12-** Scale B bag locked | **IN12** | **16-**Clear alarm |
| **Out13** | **15-** Scale A pat bag | | |
| **Out14** | **16-** Scale B pat bag | | |
| **Out15** | **23-** Alarm | | |
| **Out16** | **25-** Over | | |

Bulk scale Default definition:

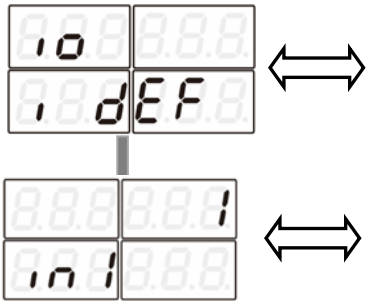
| Output (O def) | | Amount of input (I def) | |
|---|---|---|---|
| **Out1** | **1-** Run | **IN1** | **1-** Start |
| **Out2** | **2-** Stop | **IN2** | **2-** Emergency stop |
| **Out3** | **3-** Scale A Coarse Flow | **IN3** | **3-** Slow stop |
| **Out4** | **4-** Scale A Medium Flow | **IN4** | **4-** Scale A zero |
| **Out5** | **5-** Scale A Fine Flow | **IN5** | **5-** Scale B zero |
| **Out6** | **6-** Scale B Coarse Flow | **IN6** | **9-** Scale A manual discharge |
| **Out7** | **7-** Scale B Medium Flow | **IN7** | **10-** Scale B manual discharge |
| **Out8** | **8-** Scale B Fine Flow | **IN8** | **29-** Scale A manual fill (level) |
| **Out9** | **10-** Scale A value | **IN9** | **30-** Scale B manual fill (level) |
| **Out10** | **13-** Scale B value | **IN10** | **11-** Scale A manual Fine Flow |
| **Out11** | **11-** Scale A discharge | **IN11** | **12-** Scale B manual Fine Flow |
| **Out12** | **14-** Scale B discharge | **IN12** | **16-** Clear alarm |
| **Out13** | **24-** Batch completed | | |
| **Out14** | **27-** Over/Under | | |
| **Out15** | **23-** Alarm | | |
| **Out16** | **25-** Over | | |

3.9.1 Output/Input Port Definition (IO def)

The contents of the output and input ports can be defined according to the actual application. The definition of the input and output switching parameters can be modified through the menu interface.

**1. The switch quantity defines the operation**

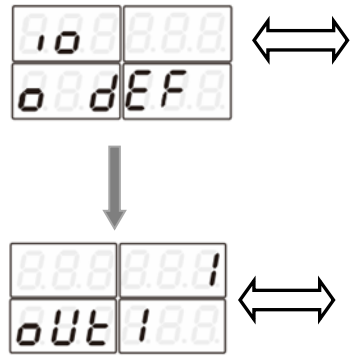
Input quantity definition




Enter the input definition interface.

The first row shows the input function code, and the second row shows the input port. You can switch the input function code **(I0~I57)** through the up SUM and down BAT keys, the specific code meaning check the following Output/Input port definition. The other input port is defined in the same way.

Output definition




Go to the Output definition interface.

The first row shows the output function code, and the second row shows the output outlet. You can switch the output function code (**O0~O76**) through the up SUM and down BAT keys**, t**he specific code meaning check the following switching content description. Other outputs are defined in the same way.

**2. Switch quantity content description**

Each switch quantity corresponds to a function code, as follows:

| Output | | |
|---|---|---|
| **Code** | **Content** | **Instructions** |
| **O0** | Undefined | Undefined if output port is O0. |
| **O1** | Run | The output signal is defined valid in run status. |
| **O2** | Stop | The output signal is defined valid in stop status. |
| **O3** | Scale A Coarse Flow | To control large discharge opening of scale A filling system. If present weight value<target value –scale A Coarse Flow leading quantity in filling process, output signal is effective. |
| **O4** | Scale A Medium Flow | To control medium discharge opening of scale A filling system. If present weight value<target value –scale A Medium Flow leading quantity in filling process, output signal is effective. |
| **O5** | Scale A Fine Flow | To control slow discharge opening of scale A filling system. If present weight value<target value –scale A Fine Flow leading quantity in filling process, output signal is effective. |
| **O6** | Scale B Coarse Flow | To control large discharge opening of scale B filling system. If present weight value<target value –scale B Coarse Flow leading quantity in filling process, output signal is effective. |
| **O7** | Scale B Medium Flow | To control medium discharge opening of scale B filling system. If present weight value<target value –scale B Medium Flow leading quantity in filling process, output signal is effective. |
| **O8** | Scale B Fine Flow | To control slow discharge opening of scale B filling system. If present weight value<target value –scale B Fine Flow leading quantity in filling process, output signal is effective. |
| **O9** | Scale A bag locked | To control bag locked. Effective signal: bag locked. Ineffective signal: bag unlocked. |
| **O10** | Scale A value | Used to indicate scale A filling completed. During Fine Flow complete and material discharge (Net Weigher mode) or before pat bag (Gross Weigher), output signal is effective. |
| **O11** | Scale A discharge | To control hopper discharge gate. Output signal is effective when start discharging material from hopper A to bag. |
| **O12** | Scale B bag locked | To control bag locked system. Effective signal: bag locked. Ineffective signal: bag unlocked. Only effective in Gross Weigher mode. |
| **O13** | Scale B value | Used to indicate scale B filling completed. During Fine Flow complete and material discharge (Net Weigher mode) or before pat bag (Gross Weigher), output signal is effective. |
| **O14** | Scale B discharge | To control hopper discharge gate. Output signal is effective when start discharging material from hopper B to bag. |
| **O15** | Scale A pat bag | Used to control pat bag machine. The pulse width and times are controllable. |
| **O16** | Scale B pat bag | Used to control pat bag machine. The pulse width and times are controllable. (Only for Gross Weigher mode.) |
| **O17** | Scale A cut material | Output is effective only during scale A filling period. |
| **O18** | Scale B cut material | Output is effective only during scale B filling period. |
| **O19** | Filling | To control the filling system. When the low material level input defined invalid, the output is effective. When the upper material level defined valid, the output is ineffective. |
| **O20** | Lack of material | When the low material level input defined invalid, the output |

| | | |
|---|---|---|
| | | is effective. When the upper material level defined valid, the output is ineffective. |
| **O21** | Scale A zero zone | Output port defined effective if scale A current weight is smaller than near-zero value. |
| **O22** | Scale B zero zone | Output port defined effective if scale B current weight is smaller than near-zero value. |
| **O23** | Alarm | Output port defined effective if Over/Under or batch times are over. |
| **O24** | Batch completed | Output port defined effective if batch completed. |
| **O25** | Over | Signal is effective when over. |
| **O26** | Under | Signal is effective when under. |
| **O27** | Over/Under | Signal is effective when over or under. |
| **O28** | Conveyor output | To control conveyor starts and stop in Gross Weigher mode. Effective signal: start. Ineffective signal: stop. |
| **O29** | Coding<br>/Scale A coding | Output this signal when coding delay over and bag locked output is effective. |
| **O30** | Scale B coding | Output this signal when coding delay over and bag locked output is effective. Only for Gross Weigher mode. |
| **O31** | Scale A filling pulse output | When the filling mode is set to a stepping motor controlled fill gate ON/OFF, the output signal is a pulse signal fed to the scale A stepper motor driver to control the motor rotation.<br>**Note: This function can only be defined on one of the port to OUT12~OUT16** |
| **O32** | Scale A filling direction | When the filling mode is set to a stepping motor controlled fill gate ON/OFF, the output signal is a direction signal fed to the scale A stepper motor driver to control the motor rotation.<br>**Note: This function can only be defined on one of the port to OUT1~OUT11.** |
| **O33** | Scale B filling pulse output | When the filling mode is set to a stepping motor controlled fill gate ON/OFF, the output signal is a pulse signal fed to the scale B stepper motor driver to control the motor rotation.<br>**Note: This function can only be defined on one of the port to OUT12~OUT16.** |
| **O34** | Scale B filling direction | When the filling mode is set to a stepping motor controlled fill gate ON/OFF, the output signal is a direction signal fed to the scale B stepper motor driver to control the motor rotation.<br>**Note: This function can only be defined on one of the port to OUT1~OUT11.** |
| **O35** | Scale A bag lock/unlock pulse output | When the bag lock mode is set to a stepping motor controlled bag locked or bag unlocked, the output signal is a pulse signal fed to the scale A stepper motor driver to control the motor rotation.<br>**Note: This function can only be defined on one of the port to OUT12~OUT16.** |
| **O36** | Scale A bag lock/unlock direction signal | When the bag lock mode is set to a stepping motor controlled bag locked or bag unlocked, the output signal is a direction signal fed to the scale A stepper motor driver to control the motor rotation.<br>**Note: This function can only be defined on one of the port to OUT1~OUT11.** |

| | | |
|---|---|---|
| **O37** | Scale B bag lock/unlock pulse output | When the bag lock mode is set to a stepping motor controlled bag locked or bag unlocked, the output signal is a pulse signal fed to the scale B stepper motor driver to control the motor rotation. **(Only for Gross Weigher mode)** **Note: This function can only be defined on one of the port to OUT12~OUT16.** |
| **O38** | Scale B bag lock/unlock direction signal | When the bag lock mode is set to a stepping motor controlled bag locked or bag unlocked, the output signal is a direction signal fed to the scale B stepper motor driver to control the motor rotation. **(Only for Gross Weigher mode)** **Note: This function can only be defined on one of the port to OUT1~OUT11.** |
| **O39** | Scale A discharge pulse output | When the discharge mode is set to a stepping motor controlled discharging, the output signal is a pulse signal fed to the scale A stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT12~OUT16.** |
| **O40** | Scale A discharge direction signal | When the discharge mode is set to a stepping motor controlled discharging, the output signal is a pulse signal fed to the scale A stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT1~OUT11.** |
| **O41** | Scale B discharge pulse output | When the discharge mode is set to a stepping motor controlled discharging, the output signal is a pulse signal fed to the scale B stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT12~OUT16.** |
| **O42** | Scale B discharge direction signal | When the discharge mode is set to a stepping motor controlled discharging, the output signal is a pulse signal fed to the scale B stepper motor driver to control the motor rotation. **Note: This function can only be defined on one of the port to OUT1~OUT11.** |
| **O43** | Scale A filling gate open | When the filling mode is set normal filling motor controlled the discharge gate, used to control large discharge gate opening of scale A. This signal is valid in filling process and the valid time can be set in the motor parameters. |
| **O44** | Scale B filling gate open | When the filling mode is set normal filling motor controlled the discharge gate, it used to control large discharge gate opening of scale B. This signal is valid in filling process and the valid time can be set in the motor parameters. |
| **O45** | Scale A filling gate closed | When the filling mode is set normal filling motor controlled the discharge gate used to control large discharge gate opening of scale A. This signal is valid in the end of Coarse/Medium/Fine Flow until filling limit is effective and the valid time can be set in the motor parameters. |
| **O46** | Scale B filling gate closed | When the filling mode is set normal filling motor controlled the discharge gate used to control large discharge gate opening of scale B. This signal is valid in the end of Coarse/Medium/Fine Flow until filling limit is effective and the valid time can be set in the motor parameters. |
| **O47** | Scale A bag unlock | When bag locked mode is set normal motor control bag |

| | | |
|---|---|---|
| | | locked/unlocked. Effective signal: bag unlocked. Ineffective signal: bag locked. |
| **O48** | Scale B bag unlock | When bag locked mode is set normal motor control bag locked/unlocked. Effective signal: bag unlocked. Ineffective signal: bag locked. |
| **O49** | Scale A discharge gate closed | When the discharge mode is set to discharge with a common motor reversing controlling so as to control scale A discharge gate closing. Effective signal: discharge gate closed after discharging. Ineffective signal: stop closing. |
| **O50** | Scale B discharge gate closed | When the discharge mode is set to discharge with a common motor reversing controlling so as to control scale B discharge gate closing. Effective signal: discharge gate closed after discharging. Ineffective signal: stop closing. |
| **O51** | Sewing machine output | Sewing input valid, after the start delay of sewing ends, sewing output is valid. |
| **O52** | cutting machine output | Sewing output valid time ends, this output is valid, The valid time is the output valid time of the cutter |
| **O53** | Auxiliary pulse output 1 | Auxiliary pulse 1 input valid, output pulse signal（valid time is auxiliary pulse 1 valid time，invalid time is auxiliary pulse 1 invalid time）,stop output when the total execution time is up （If the total execution time is set to 0, the pulse output is always pressed）. |
| **O54** | Auxiliary pulse output 2 | Auxiliary pulse 2 input valid, output pulse signal（valid time is auxiliary pulse 2 valid time，invalid time is auxiliary pulse 2 invalid time）,stop output when the total execution time is up （If the total execution time is set to 0, the pulse output is always pressed）. |
| **O55** | Auxiliary pulse output 3 | Auxiliary pulse 3 input valid, output pulse signal（valid time is auxiliary pulse 3 valid time，invalid time is auxiliary pulse 3 invalid time）,stop output when the total execution time is up （If the total execution time is set to 0, the pulse output is always pressed）. |
| **O56** | Auxiliary pulse output 4 | Auxiliary pulse 4 input valid, output pulse signal（valid time is auxiliary pulse 4 valid time，invalid time is auxiliary pulse 4 invalid time）,stop output when the total execution time is up （If the total execution time is set to 0, the pulse output is always pressed）. |
| **O57** | A discharge patting output | It is used in the function of discharging patting. Under the running state, the function of starting patting under the condition of incomplete discharge can discharge the material completely. |
| **O58** | B discharge patting output | It is used in the function of discharging patting. Under the running state, the function of starting patting under the condition of incomplete discharge can discharge the material completely. |
| **O59** | Auxiliary logic Output 1 | The output signal of the auxiliary lofic output 1 |
| **O60** | Auxiliary logic Output 2 | The output signal of the Auxiliary lofic output 2 |
| **O61** | Auxiliary logic Output 3 | The output signal of the Auxiliary lofic output 3 |
| **O62** | Auxiliary logic Output 4 | The output signal of the Auxiliary lofic output 4 |

| | | |
|---|---|---|
| **O63** | Auxiliary logic Output 5 | The output signal of the Auxiliary lofic output 5 |
| **O64** | Auxiliary logic Output 6 | The output signal of the Auxiliary lofic output 6 |
| **O65** | **A** Metering Hanger Up/Down | Metering Hanger Up/Down A output |
| **O66** | **B** Metering Hanger Up/Down | Metering Hanger Up/Down B output |
| **O67** | A Over /Under | When A exceeds or underranges, the output signal is defined as valid. |
| **O68** | B Over /Under | When B exceeds or underranges, the output signal is defined as valid. |
| **O69** | Last Feed | When the signal is valid, the current is the last feed. |
| **O70** | Tractor control | Connect the peripheral tractor.<br>**(Note: mainly used with peripheral traction machine, traction machine function see traction machine instrument manual)** |
| **O71** | A weigh OK | Valid after setting, not at discharge |
| **O72** | **B** Weigh OK | Valid after setting, not at discharge |
| **O73** | Discharge status | Either **A**/**B** scale is valid when the machine is unloaded. Any one of the **6** scales on the main engine is valid for Hershey |
| **O74** | Allow discharge from machine **1** | The discharge interlock is dedicated to the main machine and controls the discharge of the slave **1** |
| **O75** | Allow discharge from machine **2** | The discharge interlock is dedicated to the main machine and controls the discharge of the slave **2** |
| **O76** | Discharge Request | Either **A**/**B** scale is valid when the slave machine is unloaded. Any one of the **6** scales on the main engine is valid for Hershey |
| **O77** | Lifting hooks | Used to control the lifting bag mechanism, the signal effectively realizes the lifting bag; The signal is invalid that loosens the hook. (The lifting bag can not be loosened during the feeding process, and the lifting bag can only be loosened after the pre-feeding process and the weighing process are completed. If the lifting bag is not defined, the lifting bag signal is not judged.)<br>Note: need to be set by modbus address. |
| **O78** | Conveyor 2 Output | Control conveyor **2** output effective.<br>**Note: need to be set by modbus address.** |
| **O79** | Conveyor 3 Output | Control conveyor 3 output effective.<br>**Note: need to be set by modbus address.** |
| **O80** | Conveyor 1 Reverse the output | Control conveyor **1** reverse output effective.<br>**Note: need to be set by modbus address.** |
| **O81** | Blow | Used to control the operation of the blowing device.<br>**Note: need to be set by modbus address.** |
| **O82** | Return valve | Used to control the operation of the return air valve, the signal is effective when the blow is over.<br>**Note: need to be set by modbus address.** |
| **O83** | Multipurpose stand | For the all-in-one control stand and beater bag.<br>When not executing the beat-bag: This switching quantity is the same as the A metering bracket up (O65) state.<br>When the bag is executed: This switching quantity is opposite to the state of the A bag (O15). (The patting bag effective bracket is invalid, and the patting bag invalid bracket is effective).<br>**Note: need to be set by modbus address.** |

| | | |
|---|---|---|
| **O84** | Discharging complete | After the end of the unloading delay, the signal will be output for a period of time, indicating that the unloading is completed. **Note: need to be set by modbus address.** |
| **O85** | Serial Controllable output 1 | Control switch output 1 through serial port. **Note: need to be set by modbus address.** |
| **O86** | Serial Controllable output 2 | Control switch output 2 through serial port. **Note: need to be set by modbus address.** |
| **O87** | Serial Controllable output 3 | Control switch output 3 through serial port. **Note: need to be set by modbus address.** |
| **O88** | Serial Controllable output 4 | Control switch output 4 through serial port. **Note: need to be set by modbus address.** |
| **O89** | Serial Controllable output 5 | Control switch output 5 through serial port. **Note: need to be set by modbus address.** |
| **Input** | | |
| **I0** | Undefined | Undefined if input port is 00 |
| **I1** | Start | This signal is valid in running status. (Pulse input signal) |
| **I2** | Emergency stop | Return to stop state if signal is valid. (Pulse input signal) |
| **I3** | Slow stop | Finish current package and then return to stop status. (Pulse input signal) |
| **I4** | Scale A zero | Clear zero of scale A if signal is effective. (Pulse input signal) |
| **I5** | Scale B zero | Clear zero of scale B if signal is effective. (Pulse input signal) |
| **I6** | Bag locked/unlocked request | To control bag locked/unlocked. Bag locked when first input this signal; bag unlocked if input the signal again. |
| **I7** | Scale B bag locked/unlocked request | To control bag locked/unlocked. Scale B bag locked when first input this signal; scale B bag unlocked if input the signal again. Only for Gross Weigher. |
| **I8** | Clear accumulated | To clear accumulated weight and times.<br>Accumulated recipes and users total are cleared at the same time. |
| **I9** | Scale A manual discharge | Used to manually clear the material in the hopper. Scale A discharge output is valid when input signal is valid, but invalid if again. |
| **I10** | Scale B manual discharge | Used to manually clear the material in the hopper. Scale B discharge output is valid when input signal is valid, but invalid if again. |
| **I11** | Scale A manual Fine Flow | Scale A slow output is valid when first input this signal, invalid if input again. |
| **I12** | Scale B manual Fine Flow | Scale B slow output is valid when first input this signal, invalid if input again. |
| **I13** | Scale A manual filling | Combination filling mode: Scale A Coarse /Medium /Fine Flow output is valid when first time input the signal. Invalid if input again.<br>Solo filling mode: Scale A Coarse Flow output is valid when first time input the signal. Invalid if input again. |
| **I14** | Scale B manual filling | Combination filling mode: Scale B Coarse /Medium /Fine Flow output is valid when first time input the signal. Invalid if input again.<br>Solo filling mode: Scale B Coarse Flow output is valid when first time input the signal. Invalid if input again. |
| **I15** | Select recipes | Only valid once. Recipe changes to next one which target value is not zero. |
| **I16** | Clear alarm | Clear alarm output. (Pulse input signal) |

| | | |
|---|---|---|
| **I17** | Upper level | To connect upper level of the hopper. (Level input) |
| **I18** | Under level | To connect under level of the hopper. (Level input) Lack materials if invalid.Unlack materials if valid. |
| **I19** | Start/Stop (Level) | Enter running status if signal is valid, return to stop status if invalid. This is level signal. |
| **I20** | Start/Slow stop (Level) | Enter running status if signal is valid, return to stop status if invalid. This is level signal. |
| **I21** | Scale A manual discharge (Level) | Manually clear the materials in the hopper. Scale A discharge output is valid if input is effective. |
| **I22** | Scale B manual discharge (Level) | Manually clear the materials in the hopper. Scale B discharge output is valid if input is effective. |
| **I23** | Bag Locked in pace | If the input is defined, valid means ready, invalid means not ready.<br>Bucket scales mode: If bag locked in the running process, the controller will begin to discharge when bag locked ready. In discharge process, will not check the effectivity of signal.<br>No-bucket scales r mode: If bag locked in the running process, the controller will begin to fill when bag locked ready. In filling process, will not check the effectivity of signal.<br>This is level input. |
| **I24** | Scale B bag locked ready | If input signal is valid, means bag locked ready and invalid means bag locked not ready.<br>Gross Weigher mode: The controller starts to fill once detect bag locked ready is valid. In filling process, will not check the effectivity of signal.<br>This is level input. |
| **I25** | Scale A discharge gate closed ready | If the signal is valid, means scale A gate closed ready. If discharge real time detection set ON and detect invalid sigal, will shield filling output and alarm, the output controller light will be off. If detect valid signal and have to fill, it will clear alarm automatically and continue to fill. If discharge real time detection set OFF and discharge gate closed not ready, it will alarm. Once detect valid signal, starting to fill. |
| **I26** | Scale B discharge gate closed | If the signal is valid, means scale B gate closed ready. If discharge real time detection set ON and detect invalid sigal, will shield filling output and alarm, the output controller light will be off. If detect valid signal and have to fill, it will clear alarm automatically and continue to fill. If discharge real time detection set OFF and discharge gate closed not ready, it will alarm. Once detect valid signal, starting to fill. |
| **I27** | Scale A manual Fine Flow (level) | Effective signal: Scale A manual Fine Flow output is valid.<br>Ineffective signal: Scale A manual Fine Flow output is invalid. |
| **I28** | Scale B manual Fine Flow (level) | Effective signal: Scale B manual Fine Flow output is valid.<br>Ineffective signal: Scale B manual Fine Flow output is invalid. |
| **I29** | Scale A manual fill (level) | Combination filling mode: Scale A Coarse/Medium/Fine Flow output are valid if effective input.<br>Solo filling mode: Scale A Coarse Flow output is valid if effective input. |
| **I30** | Scale B manual fill (level) | Combination filling mode: Scale B Coarse/Medium/Fine Flow output are valid if effective input.<br>Solo filling mode: Scale B Coarse Flow output is valid if effective input. |

| | | |
|---|---|---|
| **I31** | Scale A fill gate closed ready | When stepping motor controls filling gate ON/OFF, it is limit digit input signal for scale A filling gate closed ready. When normal motor controls filling gate ON/OFF, it is limit digit input signal for scale A filling gate closed ready. (Note: this signal is determined by the digit signal type. Positive logic: The filling gate is closed if signal is valid. Negative logic: The filling gate is closed if signal is invalid. |
| **I32** | Scale B fill gate closed ready | When stepping motor controls filling gate ON/OFF, it is limit digit input signal for scale B filling gate closed ready. When normal motor controls filling gate ON/OFF, it is limit digit input signal for scale B filling gate closed ready. (Note: this signal is determined by the digit signal type. Positive logic: The filling gate is closed if signal is valid. Negative logic: The filling gate is closed if signal is invalid.) |
| **I33** | Scale A bag unlocked ready | It is a limit input signal of bag unlocked ready when stepping motor and motor double limit digit controlling bag locked/unlocked. (Note: this signal is determined by the digit signal type. Positive logic: Bag unlocked ready if signal is valid. Negative logic: Bag unlocked ready if signal is invalid.) |
| **I34** | Scale B bag unlocked ready | It is a limit input signal of bag unlocked ready when stepping motor and motor double limit digit controlling bag locked/unlocked. (Note: this signal is determined by the digit signal type. Positive logic: Bag unlocked ready if signal is valid. Negative logic: Bag unlocked ready if signal is invalid.) |
| **I35** | Scale A discharge gate opened ready | When material discharged is controlled by normal motor reversible double limit, it is a signal of discharge gate opening ready and discharge gate opend. |
| **I36** | Scale B discharge gate opened ready | When material discharged is controlled by normal motor reversible double limit, it is a signal of discharge gate opening ready and discharge gate opend. |
| **I37** | Sewing machine input | When this I/O Module input is valid, start sewing valid output (pulse signal). |
| **I38** | Sewing machine Emergency Stop | When this I/O Module input is valid, sewing stop output (level signal). |
| **I39** | Auxiliary pulse 1 | The input is valid, the auxiliary pulse 1 output is valid, the second input is valid, and the auxiliary pulse 1 output is invalid |
| **I40** | Auxiliary pulse 2 | The input is valid, the auxiliary pulse 2 output is valid, the second input is valid, and the auxiliary pulse 2 output is invalid |
| **I41** | Auxiliary pulse 3 | The input is valid, the auxiliary pulse 3 output is valid, the second input is valid, and the auxiliary pulse 3 output is invalid |
| **I42** | Auxiliary pulse 4 | The input is valid, the auxiliary pulse 4 output is valid, the second input is valid, and the auxiliary pulse 4 output is invalid |
| **I43** | Auxiliary logic input 1 | Custom trigger input signal for auxiliary logic 1. |
| **I44** | Auxiliary logic input 2 | Custom trigger input signal for auxiliary logic 2. |
| **I45** | Auxiliary logic input | Custom trigger input signal for auxiliary logic 3. |

| | | |
|---|---|---|
| | 3 | |
| **I46** | Auxiliary logic input 4 | Custom trigger input signal for auxiliary logic 4. |
| **I47** | Auxiliary logic input 5 | Custom trigger input signal for auxiliary logic 5. |
| **I48** | Auxiliary logic input 6 | Custom trigger input signal for auxiliary logic 6. |
| **I49** | Filling allow input | Filling allowed input: if filling allowed input is defined in the I/O Module, judge whether filling allowed input is effective before filling flow. If it is effective, the filling flow will be started. If it is not, wait. |
| **I50** | DISC allow input | DISC allow input is only for Net Weigher mode, if Disc allowed input is defined in the I/O Module, judge whether Disc allowed input is effective after waiting. If it is effective, the Disc flow will be started. If it is not, wait. |
| **I51** | B Filling allow input | Filling allowed input: if B filling allowed input is defined in the I/O Module, judge whether B filling allowed input is effective before filling flow. If it is effective, the filling flow will be started. If it is not, wait. |
| **I52** | B DISC allow input | DISC allow input is only for Net Weigher mode, if B Disc allowed input is defined in the I/O Module, judge whether B Disc allowed input is effective after waiting. If it is effective, the Disc flow will be started. If it is not, wait. |
| **I53** | **A** Metering Hanger Up/Down | When this input is valid, **A** Metering hanger upward is valid |
| **I54** | **B** Metering Hanger Up/Down | When this input is valid, **B** Metering hanger upward is valid |
| **I55** | Slave machine **1** Discharge request | The discharge interlock is dedicated to the host and is used to obtain the discharge request of slave **1**. |
| **I56** | Slave machine **2** Discharge request | The discharge interlock is dedicated to the host to get the discharge request from slave **2**. |
| **I57** | Discharge status from machine | Discharge interlock is special for the main machine, used to judge whether the slave machine is discharging. |
| **I58** | Congestion input | In bulk material accumulation mode, the material cannot be discharged when the congestion input is valid.<br>**Note: need to be set by modbus address.** |
| **I59** | Bag hanging request | Used to control the action of the lifting mechanism.<br>**Note: need to be set by modbus address.** |
| **I60** | Conveyor 1 Forward turn | In the stopped state, manually control the conveyor to start the forward turn. (When the SCram signal is effective, the forward turn output of conveyor **1** is invalid).<br>**Note: need to be set by modbus address.** |
| **I61** | Conveyor 1 Reverse | Control the conveyor to start the reverse. (The conveyor **1** reverse output is not effective when the scram signal is in effect). **Note: need to be set by modbus address.** |
| **I62** | Conveyor 2 Limit | Conveyor **2** in place signal.<br>**Note: Need to be set by modbus address.** |
| **I63** | Conveyor 3 Limit | Conveyor **3** position signal.<br>**Note: Need to be set by modbus address.** |
| **I64** | Done manually | In the running state, the signal input is effective, the instrument automatically enters the fixed value, and the running state turns to slow stop.<br>**Note: need to be set by modbus address**. |
| **I65** | Material level | The signal works once, the meter shields the level function, |

| | | |
|---|---|---|
| | shielding | works again, the meter lifts the level shield.<br>**Note: need to be set by modbus address.** |
| **I66** | Enter flag 1 | When the input is valid, there will be a corresponding state in the communication. The switch input state is mainly open for use. **Note: need to set by modbus address**. |
| **I67** | Enter flag 2 | When the input is valid, there will be a corresponding state in the communication. The switch input state is mainly open for use. **Note: need to set by modbus address.** |
| **I68** | Enter flag 3 | When the input is valid, there will be a corresponding state in the communication. The switch input state is mainly open for use. **Note: need to set by modbus address.** |
| **I69** | Enter flag 4 | When the input is valid, there will be a corresponding state in the communication. The switch input state is mainly open for use. **Note: need to set by modbus address.** |
| **I70** | Enter flag 5 | When the input is valid, there will be a corresponding state in the communication. The switch input state is mainly open for use. **Note: need to set by modbus address.** |

3.9.2 IO test (IO test)

The **IO** Test function is used to Test whether the output and input interfaces of the instrument are correctly connected to external devices. It is divided into input test **(I Test)** and output test **(O Test)**.

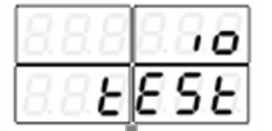
**Output test**: register address **0323~0324**（**4x0324~4x0325**）**,** coil address **0093~0108(0x0094~0x0109),** see the chapter 5.3.3 of MODBUS Address Assignment table.

Write **1** in the corresponding position of the address, the corresponding external connection output state should be valid, if not, it indicates that the connection is abnormal, check the switching power input, wiring, etc.

**Input port test**: register address **0322**（**4x0323**）**,** coil address **0081~0092(0x0082~0x0093),** see the chapter 5.3.3 of MODBUS Address Assignment table.

When the external input is valid, the interface does not respond, it indicates that the connection is abnormal, check the switching power input, wiring, etc.

## Input test

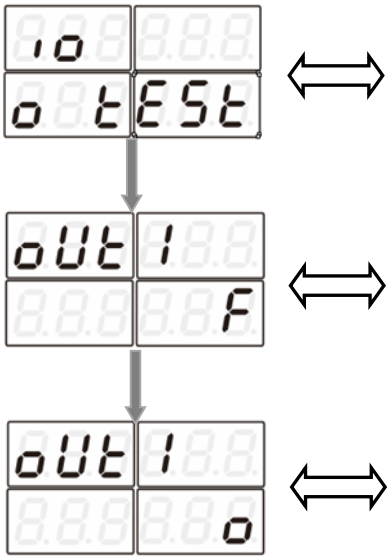



Enter the switch quantity TEST interface, display **io TEST**, press the button ENTER to enter the input switch quantity test interface.


12 bit **F** is displayed to test the input switch quantity.


In the case that the external output is connected to the device, the **IN1** input is valid at this time, and the first bit of the switch quantity is **F** turn to **O**, indicating that the switch quantity is connected normally. The other bits are also tested in the same way. If the external input is valid and the interface does not respond, it proves that there is a problem with the hardware connection of the interface, and it is necessary to check the external connection again.

## Output test




Output switch test interface.

Take OUT1 as an example

In the case that the external output is connected to the device, press ENTER, the output 1 character **F** to change to **O**, if the corresponding external output is valid, it means that this output is connected properly. The other outputs are also tested. Switch to O, if the external device does not respond, you need to check the outlet connection.

# 4. Function Description

## 4.1 Set work mode

The **GMC-X904D** has 3 scale structure configurations. The scale structure and working mode can be set under working Parameters (Set up). The structure of the scale body is optional: there are bucket scales, no bucket scales, bulk material scales.

Note: The working mode of the bucket-scale and the no bucket scales supports the dual scale interlock mode. Other scales do not support dual scale interlocking mode**.**

**1. Working parameters When the structure of the scale body is set to a bucket, each working mode:**

| Working mode | There are bucket AB double scale | There is A bucket independent A scale | There are independent B scale | Double bucket double clip bag AB works independently | Double bucket double clip bag AB combination |
|---|---|---|---|---|---|
| The target value is set off separately | 1） If the target value is greater than the maximum capacity of a single bucket, the target value of a single scale will be converted automatically;<br>2） Set the target value is less than or equal to the maximum capacity of a single bucket, and the single scale target value is the target value; | | | | |
| The target value is set separately to open | Set the A/B target value to be less than or equal to the single bucket maximum capacity | Set the A goal value to be less than or equal to the maximum capacity per bucket | Set the target value B to be less than or equal to the maximum capacity of a single bucket | Set the target value A and B to be less than or equal to the maximum capacity of a single bucket | Set the target value of A and B can only be less than or equal to the maximum capacity of a single bucket |

**Note: 1)** Double bucket double clip bag independent mode Double bucket double clip bag combination mode has two clip bag mechanism, when the double scale will start feeding at the same time.

2) The bucket mode generally uses the double scale working mode, and the rest mode is the fault operation mode.

**2. Working parameters When the scale body structure is set to no bucket packaging:**

| Working mode | Target value setting |
|---|---|
| Dual scale independent working mode | The **AB** target value is set to off separately, and both AB use the target value |
| | The AB target values are set separately to on, and the A/B target values are used separately for AB |
| Dual scale combined working mode | AB target values are individually set to off, and both AB use target values |
| | The AB target value is set to ON separately, and the A/B target value for AB is used separately |

## 4.2 Batches

The number of batches can be set by long button(BAT)2s under the main screen or **4x0102~4x0103** at the modbus address.

Batch times are used to remind the number of packaging times. When the set batch times are completed in the process of automatic operation, the instrument will issue the batch times to alarm and stop, waiting for user processing, the batch times to and alarm output is effective, at this time the "clear alarm" input signal is effective, the instrument will

clear the alarm. If the number of batches is set to **0**, the number of batches will not be judged.

Batch count ranges **from 0 to 9999**. The initial default value is **0 (**no batch count judgment is made).

## 4.3 Filling Level Control

Due to the different application conditions, the installation of the level device of the packing scale storage bin is divided into two situations: double level (upper and lower level), single level (lower level) and no level.

### 4.3.1 Double level

Upper and lower levels are defined, corresponding to the double level situation. At this time, the instrument has the feed control function, the control principle is: when the input of the upper and lower level is invalid, the feed output of the instrument is effective; When the input of the feeding level is effective, the feeding output is invalid. At the same time, before each feeding (large, medium and slow feeding), the instrument will detect whether the feeding level is effective, if not, wait for this signal; Only when this signal is effective can the feeding process begin. During the feeding process, the meter does not detect whether the blanking level signal is valid.

### 4.3.2 Single feed level

The lower level is defined, the upper level is not defined, corresponding to the single level situation. At this time, the meter will not perform feed control. Only check the level before feeding, and wait for this signal if the level is invalid; Only when this signal is effective can the feeding process begin. During the feeding process, the meter does not detect whether the blanking level signal is valid.

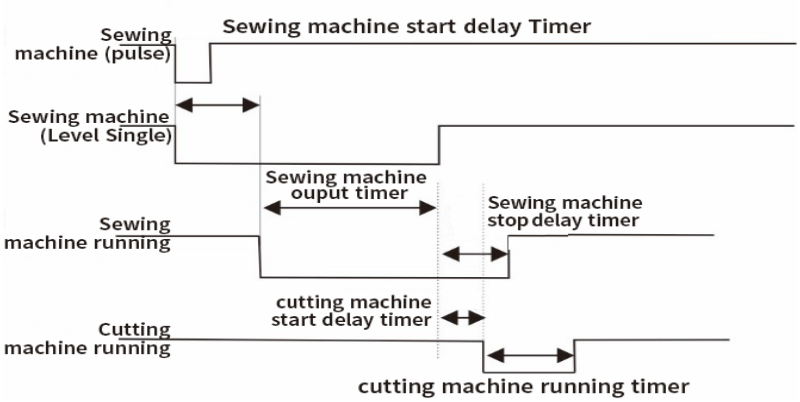
The upper and lower level are not defined, corresponding to the case of no level. At this time, the instrument does not carry out feed control, and does not carry out the effective detection of the lower level before feeding.

## 4.4 Sewing control

The switching quantity involved in the function of the sewing machine is: the output switching quantity - "**sewing** machine", "**cutting machine**"; Input switch quantity - "**sewing machine input**", "**sewing machine emergency stop**".

Method **1** (the output time of the sewing machine is not **0**) : After the input (pulse) signal of the sewing machine is effective, the working process of the sewing machine begins. First**,** start the sewing machine startup delay. When the delay time is up, it is considered that the sewing machine is started **in place, and then output the sewing machine. The** output of the sewing machine is invalid after the delay time ends before the stop of the sewing machine. When **the delay** time of the start of the cutting machine reaches, the cutting machine starts to work, and the working time **is the output time of the cutting machine.** After the output time of the cutting machine reaches, the cutting machine stops working. The process is over.

Method **2** (the output time of the sewing machine **is 0**) : after the input (level) signal of the sewing machine is effective, the sewing machine start delay is carried out first**.** After the delay time, it will test again whether the startup input signal of the sewing machine is effective. If it is invalid, the output signal of the sewing machine will not be **output. The continuous output time is the output time of the sewing machine.** After the output time of the sewing machine arrives, the delay time before the start **of the sewing machine is stopped,** and the start **delay** time of the cutting machine is started. The sewing machine continues to work and output, and the duration is **the shutdown delay** time of the sewing machine. **The cutting machine start delay** time, when **the cutting machine start delay** time arrives, the cutting machine starts to work, the working time is **the output time of the cutting machine, the cutting machine** stops working after the output time of the cutting machine arrives.




## 4.5 Discharge patting control

**Independent vibration:**

Take Scale A discharge patting function for example: The unloading vibration is an independent vibration. in the operate state; timing starts when discharge begins, when discharging time exceeds the set discharging valid time, the weight of the material in the hopper has not returned to the zero zone, at this time discharge patting A output is valid (this output is pulse, valid time is discharge patting valid time, invalid time is discharge patting invalid time). When discharge patting time is reach, the weight of the hopper is not lower than zero at this time, controller output discharging timeout alarm, back to stop state. When the discharge times of patting is not reached or just finished. When the weight of material in the hopper is less than zero zone value, start discharge delay time, delay to this weighing ends.

**Discharging door vibration:**

Take Scale A discharge patting function for example: unloading vibration is the vibration of the unloading door. At this point, the output control for the discharge door should be selected as A discharge patting output (the discharge vibration output at this time controls both the discharge door output and the discharge vibration (the vibration function is achieved by opening and closing the discharge door). In operating mode, when the device starts unloading, the "unloading vibration output" is effective and timing begins. When the unloading time exceeds the set unloading effective time and the weight of the material in the measurement has not returned to the zero zone, the unloading vibration A output is effective (this output is a pulse, the effective time is the unloading vibration effective time, and the invalid time is the unloading vibration ineffective time). After the number of unloading vibrations has reached, the current weight of the measuring hopper has not yet fallen below the zero zone, and the instrument outputs a timeout alarm for unloading, returning to the stopped state. When the number of unloading vibrations has not reached or just ended, and the weight of the material in the measuring hopper is less than the zero zone value, the unloading delay time will be activated. After the delay, the weighing will end.

## 4.6 Alarm function of filling and discharge overtime

Take scale A coarse flow filling overtime function for example: turn on filling and discharge overtime judge fuction, in the operate state, when Scale A starts coarse flow, starts timing, if scale A coarse flow time exceeds scale A coarse flow timeout time, controller output alarm, and back to stop state.

Take scale A discharge overtime function for example: turn on filling and discharge timeout judge function, in the operate state, when Scale A begins discharge, starts timing, if scale A discharge time exceeds scale A discharge timeout time, controller output alarm, and back to stop state.

## 4.7 Auxiliary pulse function

In the stopped or running state of the instrument, when the switching input **I39** (auxiliary

pulse **1**) is effective, the switching output **O53** (auxiliary pulse **1**) starts to output, the continuous output effective time is the output effective time of auxiliary pulse **1**, after the arrival of the time, stop the output, wait for the output invalid time of auxiliary pulse **1**) after the arrival, start output again. Stop output until the total time of auxiliary pulse **1** is reached, and invalidate the input **I39** auxiliary pulse **1**. If the total execution time of auxiliary pulse **1** is set to **0**, the auxiliary pulse output process will continue to loop.

If the switching input **I39** (auxiliary pulse **1**) is valid during the auxiliary pulse execution, the output of auxiliary pulse **1 (O53)** will stop.

## 4.8 Adaptive function

The adaptive function omits the manual adjustment of the lead step and can automatically adjust the feeding speed and accuracy. After this function is opened, it will automatically adjust the parameters of fast leading amount, leading amount, slow leading amount, fast forbidden time, adding forbidden time and slow forbidden time in the feeding process, so that the feeding speed and accuracy can be optimized. (When the **adaptive parameter update switch** is turned on, the instrument will display the current corrected parameters in real time)

Adaptive use:

**Method 1**: Set all the lead parameters (set the lead parameters, only need to be roughly accurate), the instrument will be on the basis of the current lead, according to changes in warehouse pressure, continue to modify the lead parameters, to achieve an optimal state. (Recommended to use this method)

**Method 2**: If all the current lead is **0**, when the first scale starts, the instrument will control the scale body and automatically find the corresponding lead parameters. The first scale may not be correct, but after several times of work, it will find the corresponding accurate lead and reach an optimal state.

**Attention:**

1. It is recommended to add a material level switch to ensure a stable material flow. The instrument also has the function of judging whether the material flow is stable, but it can not be judged successfully.
2. The drop correction and adaptive function can not be opened at the same time, if the adaptive function is opened, the drop correction function must be turned off first.
3. In the normal feeding process, if there is an occasional overshoot, you can consider increasing the adaptive level.

## 4.9 Hanger up control function

In no bucket mode, start the instrument, after the bag clamping, the instrument uplink signal output is effective, wait for the end of the uplink delay, start peeling (net weight mode), if the slap bag function is opened, then the uplink signal follows the slap bag signal output (if the slap bag output is invalid, the uplink is effective, the slap bag output is effective, the uplink is invalid), and the slap bag is the same after setting the value. The support uplink signal is invalid, the support goes down, start the **support down delay**, when the **support down delay** ends, start to loosen the bag.

When the instrument is in the stop state, when the support uplink signal is effective, the support goes up; When the support up signal is not effective, the support goes down.

## 4.10 Logic programming function

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

**The** logical programming parameters **MODBUS** address area is **1150~1305** (**4x1151~4x1306**), see the chapter 5.3.3 the MODBUS address assignment table.

| Logic programming **(1 to 6)** parameter | Parameters | Instructions |
|---|---|---|
| **1.**Logic (**1** to **6**) types | Off (default) | Select the type of auxiliary logic programming signal based on the logic you want to implement. |
| | Delay turn-on | |
| | Delay disconnect | |
| | Delay on and delay off | |
| | Invalid-Valid jump edge trigger | |
| | Valid -Invalid jump edge trigger | |
| **2**. Logical **(1 to 6)** trigger signal | Custom trigger input (default) | If any input from channels **1 to 12** is set as the trigger signal, the input port is fixed as the trigger signal. |
| | >= or <= Weight value triggers | After setting the trigger condition, the current weight value is compared with the set weight threshold, and the output is triggered when the condition is met. |
| | Input ports **1 to 12** | Set any one of the input ports **1 to 12** as a trigger signal, then the input can be either a trigger signal or a functional signal of the input port. |
| | Switch quantity output definition | After setting the trigger signal as "an internal function signal", the trigger output is carried out according to the function signal. |
| **3**. Trigger the input port | Enter ports **1** through **12** | Initial value: undefined. (Note: The logic trigger signal is a custom trigger input, the parameter can be set)<br>Select the switch input port corresponding to the function signal. The input port "**0** undefined" means that the function is not defined. |
| **4**. Output signal port | Output ports **1** to **16** | Initial value: undefined.<br>Select the switch output port corresponding to the function signal, and the output port "**0** undefined" means that the function is not defined. |
| **5**. Delay the on-time | Unit **s** | Initial value: **0.0**; Range: **0.0 to 99.9**.<br>After the trigger signal is valid, the logic output signal is valid only after the delay time. (Logic type is delay on and delay on and delay off, this parameter can be set) |
| **6**. Delay disconnect time | Unit **s** | Initial value: **0.0**; Range: **0.0 to 99.9**.<br>After the trigger signal is invalid, the logic output signal will be invalid after the delay time. (The logic type is delay disconnect and delay connect and delay disconnect, this parameter can be set) |
| **7**. Output the valid time | Unit **s** | Initial value: **0.0**; Range: **0.0 to 99.9**.<br>The duration of the logical output signal after the output is valid, which becomes invalid after the end of this time. (The logic type is invalid - valid jump edge and valid - invalid jump edge, this parameter can be set only) |

| | | |
|---|---|---|
| **8**. Logical threshold weight | Consistent with the scale unit | Initial value: **0.00**; Range: **0.0~ maximum range**. Set the weight value, current weight and threshold weight comparison, triggered when the weight value trigger condition is met. (Valid when the trigger signal selects ">= or <= Weight value"). |

**Delay turn-on**

● When you select a delay switch [custom input port trigger], the operation is as follows:

**1**. Set parameters and switch quantity: Type select [delay on], trigger signal if select [custom trigger input], trigger input port is defined as "**1**" (you can see the switch input port **1** is displayed as "logic programming **1**"), logic output port is defined as "**1**" (you can see the switch output port **1** is displayed as "logic programming **1**"), set [delay on time] **2** seconds.

**2**. Execute the operation: make the trigger signal input **1** effective, start to take the delay turn-on time, and remain valid until the delay turn-on time **2s** is over, the logic output signal port **1** output is effective, until the trigger signal input **1** is invalid, the logic output signal port **1** is also invalid. See the following time sequence diagram:

● When the delay switch [input port **1-12**] is triggered, the operation is as follows:

**1**. Set parameters and switch quantity: Trigger signal select "input port **1**" (you can see that the switch input port **1** is displayed as "original definition", assuming that the original definition is start, the function of the input port **1** can be "start" or "signal trigger"), the logic output port is defined as **1** (you can see the switch output port **1** is displayed as "logic programming **1**"), [delay turn-on time] set **2** seconds.

**2**. Perform the operation: make the trigger signal input **1** effective (start is also effective, the instrument running output is effective), start to take the delay turn-on time, has been effective until the delay turn-on time is over **2s**, the logic output signal port **1** output is effective, until the trigger signal input **1** is invalid, the logic output signal port **1** is also invalid. And the instrument will continue to run until the emergency stop signal is given.

● When the delay is switched on [switch output definition triggers], the operation is as follows:

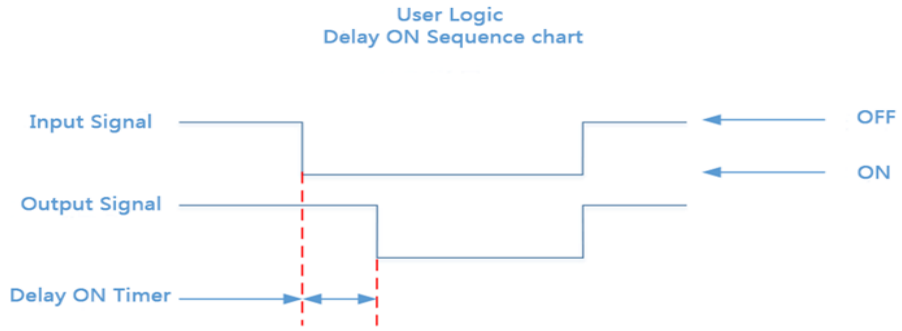
**1**. Set parameters and switching quantity: trigger signal select "run" (switching quantity output can be defined or not defined running signal), the logic output port is defined as **1** (you can see the switching quantity output port **1** is displayed as logic programming **1**), [delay switching time] set **2** seconds.

**2**. Execute operation: after the external input "start", when the "run" output signal is effective, start to go [delay turn-on time], which is valid until the delay turn-on time is over **2s**, the logical output signal port **1** output is effective, until the "emergency stop or pause" is effective, that is, after the "run" output signal is invalid, the logical output signal port **1** becomes invalid.

● When you are selected to use delay to switch on [>= or <= weight value trigger], the operation is as follows:

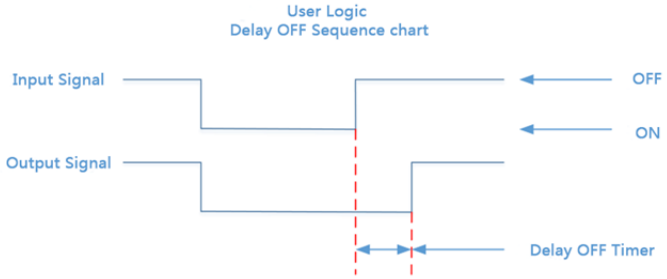
**1**. Set the corresponding threshold weight, the logic output port is defined as **1** (you can see that the switching output port **1** is displayed as logic programming **1**), and the [delay turn-on time] is set to **2** seconds.

**2**. Perform operation: When the current weight value >= or <= logic **1** threshold weight setting value is valid, start to go [delay turn-on time], and remain valid until the delay turn-on time **2s** is over, the logic output signal port **1** output is valid, until the current weight < or > logic **1** threshold weight setting value logic output signal port **1** is invalid.



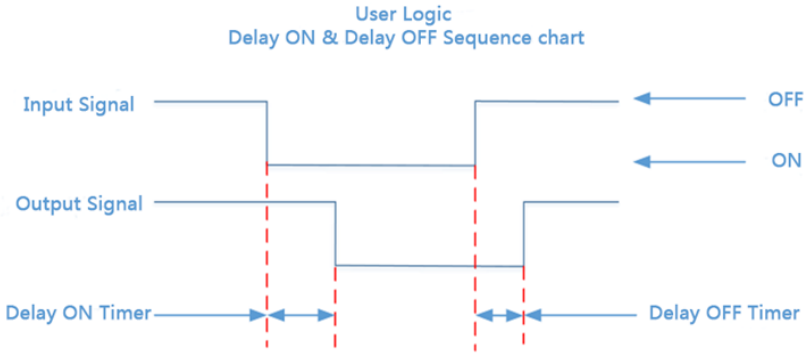

**Delay disconnect**

Related parameters: Type select [delay disconnect], select [trigger signal], set [trigger input port], [Logical output port definition], [Delay disconnect time]. For operation method, refer to "Delay switch on". Its output function is shown in the following figure:



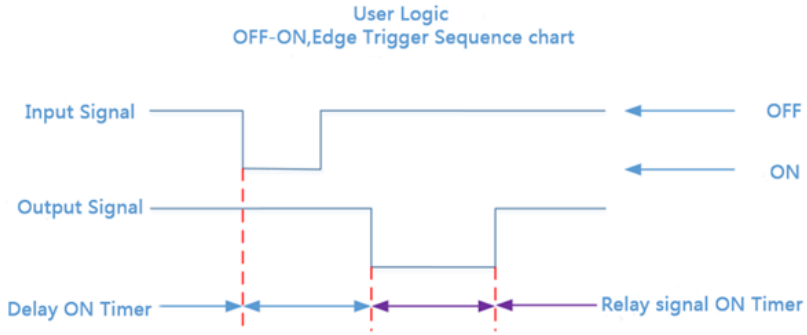

**Delay switch on and delay disconnect**

Related parameters: Type selection [Delay on and delay off], select [trigger signal], set [trigger input port], [Logical output port definition], [delay on time], [delay off time]. For the operation method, refer to "Delay on". Its output function is shown in the following figure:



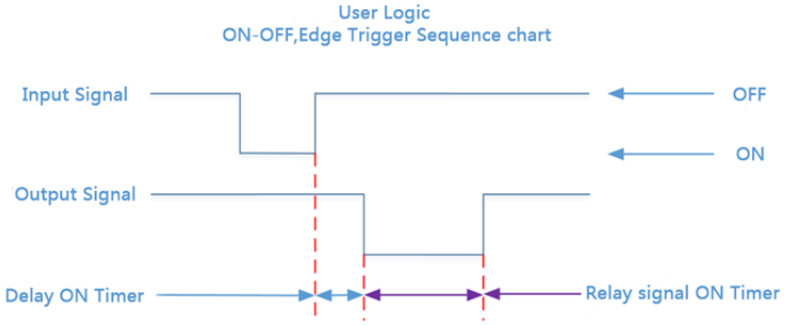

**Invalid - Valid jump edge trigger**

Related parameters: Type selection [Invalid - valid jump edge trigger], select [trigger signal], set [trigger input port], [logical output port definition], [delay turn-on time]. For the operation method, refer to "Delay turn-on". Its output function is shown in the following figure:




**Valid - invalid jump edge trigger**

Related parameters: Type selection [valid - invalid jump edge trigger], select [trigger signal], set [trigger input port], [logical output port definition], [delay turn-on time]. For the operation method, refer to "Delay turn-on". Its output function is shown in the following figure:




## 4.11 Character mapping table

The meter is displayed in two rows of 6-bit digital tubes, and the displayed English characters correspond to the following (case insensitive) :

| a | b | c | d | e | f | g | h | i | j | k | l | m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | b | C | d | E | F | G | H | I | J | K | L | M |
| n | o | p | q | r | s | t | u | v | w | x | y | z |
| n | o | P | q | r | S | t | U | v | W | x | y | Z |

## 4.12 Alarm information

| | |
|---|---|
| Error | Data out of range |
| | Zeroing failed |
| | Operation failed |
| -oFL<br>oFL | Overflow<br>-OFL: negative overflow; OFL: positive overflow |
| ModbUS<br>Error | Front - and back-end communication is interrupted |

# 5. Serial communication

**GMC-X904D** can provide two serial communication interfaces, RS485 and RS232, continuous mode, Re-Cont mode, Modbus mode, printing mode is optional. For detail about serial port parameters,refer to chapter 3.6 communication parameters.

The instrument configuration communication mode switch: 


When the switch is flipped to the user side, the instrument is set according to the parameters communication format for data communication. Dial to **the Default** terminal for data communication according to the fixed communication format: **38400** 8-N-1**,** MODBUS-RTU protocol.

## 5.1 Printing Method

When the serial communication mode is selected as the **printing** mode, the corresponding serial port can be connected to the serial printer to realize the printing of the related cumulative content.

The communication parameters related to the printing mode refer to the communication parameter items, which should be noted:

1） **Baud rate** -- The selection of this parameter should be consistent with the printer setting used in the connection.

2） **Communication Format** -- The selection of this parameter should be consistent with the printer setting used for the connection.

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

3） **Print format** - you can set the print format to **24** columns or **32** columns by communication parameters. In addition, the printing language can be set to Chinese or English.

### **5.1.1** Automatic **printing**

In print mode, the automatic print switch of communication parameters is set to on. Then the weighing result will be automatically printed after each weighing of the instrument is completed, the format is as follows:

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

**English 24 print formats are as follows:**

```
Packing list
Unit: kg
Recipe Number:      20
Total ACUM PCS
------------------------
 1              5.50
 2              5.50
```

**English 32 print formats are as follows:**

```
Packing list
Unit: kg
Recipe Number: 20

The total
Total ACUM PCS    target value result
------------------------------------
 3                5.60         5.50
 4                6.00         5.80
```

In bulk scale mode, the format as follow:

**English 24 print formats are as follows:**

```
&
Receipt and delivery list
Scale No.: 1        Recipe Number: 1
Total：0.00
Time: 2022/01/21   13:30
Unit: kg
------------------------
ACUM PCS        Results
   12             13.58
```

**English 32 print formats are as follows:**

```
&
Receipt and delivery list
Scale No.: 1        Recipe Number: 20
Total：0.00
Time: 2022/01/21   13:31
Unit: kg
ACUM PCS   Results   Total receipt/delivery
--------------------------------------
   21        13.58        240.40
```

| | | | | |
|---|---|---|---|---|
| 13 | 13.58 | 22 | 13.58 | 253.98 |
| 14 | 13.58 | 23 | 13.58 | 267.5 |
| 15 | 13.58 | | | |

**5.1.2** Total **cumulative** printing

In **print** mode, stop state, **write 1** at operation address **0310**（**4x0311**）, perform the Print Total cumulative action. The format is as follows:

**English 24 print formats are as follows:**

```
The total cumulative report
    Time: 2018/6/19 13:28
    Unit: kg
    ------------------------
    Total ACUM PCS:       18
    Total ACUM:        84.16
    ------------------------
```

**English 32 print formats are as follows:**

```
            The total cumulative report
    Time: 2018/6/19 13:36
    Unit: kg
    --------------------------------
    Total ACUM PCS:              24
    Total ACUM:               129.40
    --------------------------------
```

In bulk scale mode, the format as follow:

**English 24 print formats are as follows:**

```
The total cumulative report
    Scale No.: 1          Recipe No.: 1
    Total：0.00
    Time: 2022/01/21     13:30
    ------------------------------
    Flow rate:257.30t/h
    Total receipt/delivery:
                          471.26kg
    Total ACUM:
                          471.26kg
    ------------------------------
```

**English 32 print formats are as follows:**

```
    Scale No.: 1          Recipe No.: 1
    Total：0.00
    Time: 2022/01/21     13:31
    --------------------------------
    Flow rate:257.30t/h
    Total receipt/delivery:    471.26kg
    Total ACUM:        471.26kg

    --------------------------------
```

**5.1.3** Recipe **cumulative** printing

In the printing mode, in the stop state, **write "1~40"** in the operation address **0311 (**4x0312**)**, perform the action of printing the corresponding formula accumulation, write "41" to print all the formula accumulation values (automatically skip the formula whose target value is 0). Format is as follows:

**English 24 print formats are as follows:**

```
        Recipe cumulative report
    Time: 2018/6/19 13:29
    Unit: kg
    ------------------------
    Recipe Number:        20
    ACUM PCS of recipes:  18
    Recipe ACUM Weight: 84.16
    ------------------------
```

**English 32 print formats are as follows:**

```
        Recipe cumulative report
    Time: 2018/6/19 13:36
    Unit: kg
    --------------------------------
    Recipe Number:               20
    ACUM PCS of recipes:         24
    Recipe ACUM Weight:       129.40
    --------------------------------
```

**5.1.4** User **Cumulative** printing

In the printing mode, stop state**,** operation address **0312** (**4x0313**) write "**0~9",** perform the corresponding user accumulation action, write "100" to print the current user accumulation, write "101" to print the cumulative value of all users (automatically skip the user whose target value is 0**).** Format is as follows:

**English 24 print formats are as follows:**

**English 32 print formats are as follows:**

```
Cumulative User Report
Time: 2018/6/19 13:29
Unit: kg
------------------------
User Number:          9
User ACUM PCS:       16
```

User ACUM Weight: 72.26
————————————————

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

————————————————
User Number: 9
User ACUM PCS: 22
User ACUM Weight: 117.50
————————————————

## 5.2 Continuous Mode

The communication mode of serial port RS485 or RS232 is continuous mode, and the instrument will send out the instrument result through the selected serial port

**5.2.1** Data frame format is as follows:

| **STX** | Scale No. | **R** | **T** | **SP** | **SP** | ACUM PCS | **,** | ACUM weight | **CRC** | **CR** | **LF** |
|---|---|---|---|---|---|---|---|---|---|---|---|

Where:

**R -- 52H;**

**T -- 54H;**

**SP -- 20H;**

ACUM PCS -- **9** digits**, 000000000~999999999;**

ACUM weight -- **10** digits, including decimal points;

Example: The meter emits the following data (in hexadecimal);

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

It said:**1#** scale, the current cumulative number is **100**, the cumulative weight is **0.5000**.

## 5.3 Modbus-RTU protocol

The mode of communication parameters is **Modbus-RTU**.

**5.3.1** Function **code** and exception code

◆ Function codes supported by the instrument:

| **Function codes** | **Name** | **Instructions** |
|---|---|---|
| **03** | Read registers | Read up to **125** registers at a time |
| **06** | Write a single register | |
| **16** | Write multi-ple registers | This instrument This command only supports writing double registers. The address must be aligned when writing. Only a part of the double register is not allowed to be written. |
| **01** | Read coil | Note that this length is in bits |
| **05** | Write coil | |

Note: This meter only supports the above **MODBUS** function codes, the meter will not respond when other function codes are fed to the meter.

◆ **MODBUS** exception code response

| **CODE** | **Name** | **Meaning** |
|---|---|---|
| **02** | Illegal data address | For this meter, the error code indicates that the received data address is an impermissible address. |
| **03** | Illegal data values | The portion of data written and the allowable range. |
| **04** | Slave failure | An unrecoverable error occurs when the meter is attempting to perform the requested operation. |
| **07** | Unsuccessful pro-gramming request | For the meter, the command received cannot be executed under the current conditions. |

**5.3.2 MODBUS** Transmission Mode

The **MODBUS** transmission mode is **RTU** mode.

When communicating in **RTU** mode, each **8-bit** byte in the message is divided into **2 4-**

**bit hexadecimal** characters.

Data format: **8-bit** data bit, **1-bit** stop bit, parity check **(8-E-1)**

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

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

Code: **RTU**

**5.3.3 MODBUS** address assignment

| Protocol Address | PLC address | Meaning | Instructions | |
|---|---|---|---|---|
| The following is a read-only register | | | | |
| **0000-0001** | **40001-40002** | A Scale the current weight | The weight display of scale A on the meter | |
| **0002-0003** | **40003-40004** | A Scale current weight status | Bit | Instructions |
| | | | D0 | Weight unstable: 0; Stable: 1 |
| | | | D1 | Non-zero: 0; Zero: 1 |
| | | | D2 | The symbol +/- that currently displays the weight. Plus sign: 0; Negative sign: 1 |
| | | | D3 | Overflow |
| | | | D4 | Positive weight overflow |
| | | | D5 | Weight negative overflow |
| | | | D6 | Sensor positive overflow |
| | | | D7 | Sensor negative overflow |
| | | | D8 | Millivolts stable: 1; Unstable: 0 |
| | | | D9~31 | Reserved |
| **0004-0005** | **40005-40006** | B Scale the current weight | The weight display on the B scale on the meter | |
| **0006-0007** | **40007-40008** | B Scale current weight status | D0 | Weight unstable: 0; Stable: 1 |
| | | | D1 | Non-zero: 0; Zero: 1 |
| | | | D2 | The symbol that currently displays weight +/- plus sign: 0; Negative sign: 1 |
| | | | D3 | Overflow |
| | | | D4 | Weight positive overflow |
| | | | D5 | Weight negative overflow |
| | | | D6 | Sensor positive overflow |
| | | | D7 | Sensor negative overflow |
| | | | D8 | Millivolts stable: 1; Unstable: 0 |
| | | | D9~31 | Reserved |
| **0008-0009** | **40009-40010** | AB Scale Common control status | D0 | 0: Stop; 1: Run. |
| | | | D1 | Alarm |
| | | | D2 | Batch completed |
| | | | D3 | pocket |
| | | | D4 | Loading position |
| | | | D5 | Blanking position |
| | | | D6 | For feeding |
| | | | D7 | Underfeed |
| | | | D8 | Patter bag |
| | | | D9 | Conveyor output (no bucket) |
| | | | D10 | Coding output |
| | | | D11 | Sewing machine output |
| | | | D12 | Tangential output |
| | | | D13 | Auxiliary Pulse 1 |
| | | | D14 | Auxiliary Pulse 2 |
| | | | D15 | Auxiliary Pulse 3 |
| | | | D16 | Auxiliary Pulse 4 |

| | | | | |
|---|---|---|---|---|
| | | | D17 | Relay output 1 |
| | | | D18 | Relay Output 2 |
| | | | D19 | Relay output 3 |
| | | | D20 | Relay output 4 |
| | | | D21 | Relay output 5 |
| | | | D22 | Relay output 6 |
| | | | D23 | Slow Stop |
| | | | D24 | A bracket up |
| | | | D25 | B Bracket up |
| | | | D26 | Last Scale |
| | | | D27 | Congestion input |
| | | | D28 | Lifting bag |
| | | | D29 | Unloading complete |
| | | | D30-31 | Reserved |
| **0010-0011** | **40011-40012** | A Scale current control status | D0 | A Before adding |
| | | | D1 | A Quick Add |
| | | | D2 | A Canada |
| | | | D3 | A Slow Add |
| | | | D4 | A fixed value |
| | | | D5 | A Unloading |
| | | | D6 | A zero zone |
| | | | D7 | A Out-of-tolerance |
| | | | D8 | A underbalance |
| | | | D9 | A Qualified |
| | | | D10 | A Overunderbalance pause |
| | | | D11 | A scale clip bag (no bucket) |
| | | | D12 | A scale bat bag |
| | | | D13 | A Code output |
| | | | D14 | Gross Net weight Status Gross weight: 0; Net weight: 1 |
| | | | D15 | A Discharge vibration |
| | | | D16 | A Weigh up |
| | | | D17 | A Unloading complete |
| | | | D18~31 | Reserved |
| **0012-0013** | **40013-40014** | B Scale current control status | Refer to "Current control status of Scale A" | |
| **0014-0015** | **40015-40016** | Total cumulative weight (0~999999999) | | |
| **0016-0017** | **40017-40018** | Total cumulative number of packets (0 to 999,999,999) | | |
| **0018-0019** | **40019-40020** | Current recipe Cumulative weight (0~999999999) | | |
| **0020-0021** | **40021-40022** | Current recipe Cumulative packets (0~999999999) | | |
| **0022-0023** | **40023-40024** | User accumulated weight (0~999999999) | | |
| **0024-0025** | **40025-40026** | Cumulative number of packets for users (0 to 999,999,999) | | |
| **0026-0027** | **40027-40028** | A Weight on the previous scale | | |
| **0028-0029** | **40029-40030** | B Weight on previous scale | | |
| **0030** | **40031** | A Scale alarm information | 0. No alarm<br>1. Formula setting is not reasonable, can not start;<br>2. Single bucket maximum capacity is 0, can not start;<br>3. The weight exceeds the clearance range when clearing;<br>4. The weight is unstable when clearing;<br>5. Over and under alarm;<br>6. Single scale target value can not be set to 0 maximum range is too large; | |

| | | | |
|---|---|---|---|
| | | | 7. The single scale target value is greater than the maximum capacity of a single bucket;<br>8. Weight overflow or sensor overflow when starting;<br>9. Discharge door out of limit<br>10. No pinch bag (manual unloading judgment pinch bag opened, manual unloading unpinch bag will prompt no pinch bag, no pinch bag in operation)<br>11. Zero clearance during operation<br>12. Clear during operation out of range<br>13. Running clear is unstable<br>14. Motor parameter setting is not reasonable (ordinary motor)<br>15. Reservation |
| **0031** | **40032** | B Scale alarm information | Refer to A scale alarm information |
| **0032-0033.** | **40033-40034.** | Regular Alarm Information (Needs to be cleared manually) (Modifications of high and low bytes do not affect this status bit) | **0-** No alarm;<br>**1-** Batch times completed;<br>**2-** **A** over and underbalance suspended;<br>**3-** **B** hyperunderbalance pause;<br>**4-** **A** balance motor charging door closed timeout alarm<br>**5-** **B** balance motor charging door closing timeout alarm<br>**6-** **A** balance bag timeout alarm<br>**7-** **B** balance bag timeout alarm<br>**8-** **A** balance loose bag timeout alarm<br>**9-** **B** balance loose bag timeout alarm<br>**10-** **A** balance unloading and closing time alarm<br>**11-** **B** balance unloading and closing time alarm<br>**12-** **A** balance unloading door timeout alarm<br>**13-** **B** balance unloading door timeout alarm<br>**14-** **A** balance charging door is not closed in place alarm<br>**15-** **B** scale charging door is not closed in place to alarm<br>**16-** **The** unloading door of A scale is not closed in place to alarm<br>**17-** **B** scale discharge door is not closed in place to alarm<br>**18-** Motherboard and additional version communication abnormal alarm<br>**19-** **A** scale quickly add timeout alarm<br>**20-** Scale **B** fast overtime alarm<br>**21-** Scale A add timeout alarm<br>**22-** **B** balance will add overtime alarm<br>**23-** **A** scale slow and overtime alarm<br>**24-** **B** scale slow and overtime alarm<br>**25-** **A** balance unloading time alarm<br>**26-** Balance B unloading time alarm<br>**27-** **A** balance unloading vibration timeout alarm<br>**28-** Balance **B** unloading vibration timeout alarm |
| **0034** | **40035** | AB Calibration alarm message (modification of high and low bytes does not affect | **0-** No alarm<br>**1-** The maximum range is too small<br>**2-** The maximum range is too large<br>**3-** Voltage at zero is too high<br>**4-** Zero point voltage too low<br>**5-** Mark zero is unstable<br>**6-** The gain voltage is too high<br>**7-** Gain voltage is too small |

| | | | | |
|---|---|---|---|---|
| | | this status bit) | **8-** The scale table is unstable<br>**9-** Weight input error<br>**10-** Resolution is too small after calibration (lack of accuracy)<br>**11-** Please manually feed and then manually unload (material calibration alarm)<br>**12-** Reserve | |
| **0035** | **40036** | A scale before fast add time; Unit: S | | |
| **0036** | **40037** | A Add time to the previous scale; Unit: S | | |
| **0037** | **40038** | A scale before slow add time; Unit: S | | |
| **0038** | **40039** | A scale the previous scale set time; Unit: S | | |
| **0039** | **40040** | A scale before unloading time; Unit: S | | |
| **0040** | **40041** | A scale the total time of the previous scale; Unit: S | | |
| **0041** | **40042** | B Scale the previous scale quickly add time; Unit: S | | |
| **0042** | **40043** | B Add time to the previous scale; Unit: S | | |
| **0043** | **40044** | B Scale before slow add time; Unit: S | | |
| **0044** | **40045** | B scale the previous scale value time; Unit: S | | |
| **0045** | **40046** | B the unloading time of the previous scale; Unit: S | | |
| **0046** | **40047** | B The total time of the previous balance; Unit: S | | |
| **0047** | **40048** | A scale packing complete mark; Initial value: 0,0 ~9999(this value is not saved) | | |
| **0048** | **40049** | B Scale packing complete mark; Initial value: 0,0 ~9999(this value is not saved) | | |
| **0049** | **40050** | Reserved | | |
| The following are readable and writable registers | | | | |
| **Calibration parameter** | | | | |
| **0050** | **40051** | Units | Initial value: 1; 0 -- g; 1 -- kg; 2 -- t; 3: lb(lb) | |
| **0051** | **40052** | Decimal point | Initial value :2; 0-0; 1-0.0; 2-0.00; 3 -- 0.000; 4-0.0000 | |
| **0052** | **40053** | Division value | Initial value: 1, (1/2/5/10/20/50) | |
| **0053-0054** | **40054-40055** | Maximum range | Initial value: 10000, range (maximum range ≤ minimum index value ×100000, and not greater than 999999) | |
| **0055-0056** | **40056-40057** | A scale is calibrated with weights | There is zero weight calibration | When writing 1, the current weight is regarded as zero, and it is allowed to write when the weight of the scale is stable;<br>Return the current zero millivolt when reading. |
| **0057-0058** | **40058-40059** | | With weight gain calibration | Input standard weight (≤ maximum range);<br>Read as the current sensor relative zero millivolts |
| **0059-0060** | **40060-40061** | A scale no weight calibration | Zero calibration without weight | Write the millivolt value that will be calibrated to zero;<br>Returns the current zero millivolts when reading. |
| **0061-0062** | **40062-40063** | | Weightless gain calibration (gain millivolt value) | Write the millivolt number corresponding to the gain weight, and the meter is temporarily stored; When reading, return the absolute millivolt corresponding to the current weight (0XFFFF if the current millivolt is too small or too large to calibrate). |
| **0063-0064** | **40064-40065** | | Weightless gain calibration (gain weight | Write the weight value corresponding to the gain millivolts. The gain millivolts must be written before writing the value. The two are used for gain calibration when writing the register. |

| | | | |
|---|---|---|---|
| | | value) | Return 0000H when reading. |
| **0065-0066** | **40066-40067** | B scales are calibrated with weights | Refer to "A scale with weights calibration zero" |
| **0067-0068** | **40068-40069** | | See "A Scale with Weights Calibration Gain" |
| **0069-0070** | **40070-40071** | B scale no weight calibration | Refer to "A scale without weight calibration zero" |
| **0071-0072** | **40072-40073** | | See "A weighless Gain Calibration (Gain millivolt value)" |
| **0073-0074** | **40074-40075** | | Refer to "A Scale Weightless Gain Calibration (Gain weight value) |
| **0075-0076** | **40076-40077** | Manual feeding time | Initial value: 0 Range: 0.0~9.9 |
| **0077-0078** | **40078-40079** | A Scale material calibration | Click on the material calibration manual discharge, input the corresponding weight, read as 0. (Note: It can only be used in material calibration). |
| **0079-0080** | **40080-40081** | B Scale material calibration | Click on the material calibration manual discharge, input the corresponding weight, read as 0. (Note: It can only be used in material calibration). |
| **0081-0099** | **40082-40100** | Reserved | |
| Other parameter items | | | |
| **0100** | **40101** | Recipe number | Initial value: 1, range: 1-40 |
| **0101** | **40102** | Batch times | Initial value: 0, range: 0 to 9999 |
| **0102** | **40103** | Cumulative batch | Read Only |
| **0103** | **40104** | Locking machine | 0 - unlocked machine; 1 - locked machine |
| **0104** | **40105** | years | 0-99. |
| **0105** | **40106** | month | 1-12 |
| **0106** | **40107** | day | 1-31 |
| **0107** | **40108** | when | 0-23 |
| **0108** | **40109** | points | 0-59 |
| **0109** | **40110** | seconds | 0-59 |
| **0110 ~ 0119** | reserve | | |
| Recipe parameters - Quantitative parameter Settings | | | |
| **0120-0121** | **40121-40122** | Total target value | Weight value written range: ≤ maximum range |
| **0122-0123** | **40123-40124** | A Target value | When there is a bucket:<br>Weight value write range: ≤ single bucket maximum capacity<br>No bucket:<br>Weight value written range: ≤ maximum range |
| **0124-0125** | **40125-40126** | B Target value | |
| **0126-0127** | **40127-40128** | A Co-Fi Remain | |
| **0128-0129** | **40129-40130** | A Me-Fi Remain | |
| **0130-0131** | **40131-40132** | A Free Fall | |
| **0132-0133** | **40133-40134** | B Co-Fi Remain | |
| **0134-0135** | **40135-40136** | B Me-Fi Remain | |
| **0136-0137** | **40137-40138** | B Free Fall | |
| **0138-0139** | **40139-40140** | Zone Zero values | |
| Recipe parameters - time parameters | | | |
| **0140** | **40141** | Filling Start Delay | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0141** | **40142** | A.COMP. Inhibit Timer(Co-F) | Initial value: 0.9 seconds, range: 0.0 ~ 99.9 |
| **0142** | **40143** | A. COMP. Inhibit Timer(Me-F) | Initial value: 0.9 seconds, range: 0.0 ~ 99.9 |
| **0143** | **40144** | A. COMP. Inhibit Timer(Fi-F) | Initial value: 0.9 seconds, range: 0.0 ~ 99.9 |

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| **0144** | **40145** | B.COMP. Inhibit Timer(Co-F) | Initial value: 0.9 seconds, range: 0.0 ~ 99.9 |
| **0145** | **40146** | B. COMP. Inhibit Timer(Me-F) | Initial value: 0.9 seconds, range: 0.0 ~ 99.9 |
| **0146** | **40147** | B. COMP. Inhibit Timer(Fi-F) | Initial value: 0.9 seconds, range: 0.0 ~ 99.9 |
| **0147** | **40148** | Over/Under detection Timer | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0148** | **40149** | Result Waiting Timer | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0149** | **40150** | Discharge Delay Timer | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0150** | **40151** | Discharge interlock time | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0151** | **40152** | Bag Locked Delay Timer | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0152** | **40153** | Unlock Bag Pre-Delay Timer | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0153** | **40154** | Supplement Empty On Timer | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| Recipe parameters - over and under parameters | | | |
| **0154** | **40155** | Over/Under detection ON/OFF | Initial value: 0,1: on 0: off |
| **0155** | **40156** | Over/Under pause ON/OFF | Initial value: 0,1: on 0: off |
| **0156-0157** | **40157-40158** | Over value | Weight value written range: ≤ maximum range |
| **0158-0159** | **40159-40160** | Under value | |
| **0160** | **40161** | Supplement material ON/OFF | Initial value: 0,1: on 0: off |
| **0161** | **40162** | Supplement material times | Range: 1 to 99. Initial value: 1 |
| **0162** | **40163** | Effective supplement time | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0163** | **40164** | Ineffective supplement time | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| Formula parameters - Drop correction parameters | | | |
| **0164** | **40165** | Free fall correction ON/OFF | Initial value: 0,1: on 0: off |
| **0165** | **40166** | Correction sampling times | Range: 1 to 99. Initial value: 1 |
| **0166** | **40167** | Free fall correction range | Range: 2.0, range: 0.0 ~ 9.9, |
| **0167** | **40168** | Free fall correction magnitude | Initial value: 1,0 --100% correction; 1--50% correction; 2-25% correction. |
| **0168** | **40169** | Parameters update ON/OFF | 0: No refresh (initial value)<br>1: Refresh in real time |
| **0169** | **40170** | Hanger Up Delay Timer | Initial value: 5.5, range: 0-99.9 |
| **0170** | **40171** | Hanger Down Delay Timer | Initial value: 5.5, range: 0-99.9 |
| **0171** | **40172** | Quick feed mode | Initial value: 0,1: on 0: off |
| **0172** | **40173** | Fast Mode Time | Initial value: 0, range: 0-1000ms |
| **0173-0174.** | **40174-40175.** | Fast Mode Weight A | Initial value: 0, range: 0.0- maximum range |
| **0175** | **40176** | Number of quick | Initial value: 5, range: 0-10 |

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| | | pattern fixes | |
| **0176** | **40177** | Fast mode stabilization time | Initial value: 100, range: 0.0-1000 |
| **0177-0178.** | **40178-40179.** | Fast Mode Weight B | Initial value: 0, range: 0.0- maximum range |
| **0178** | **40179** | Reserve | |
| **0179** | **40180** | Discharging completion delay | Initial value: 0, range: 0-99.9 |
| **0180** | **40181** | Switch for multiple scales with a bucket | Initial value: 0,1: on 0: off |
| **0181** | **40182** | Blowing mode | Initial value: 0, range: 0-1 0: blowing before uplink delay 1: blowing after uplink delay |
| **0182** | **40183** | Return valve way | Initial value: 0, range: 0-1 0: Close the air return valve after discharge 1: close the air return valve after loosening the bag |
| **0183** | **40184** | Blow time | Initial value: 0.5, range: 0.0-99.9 |
| **0184** | **40185** | Hook reset delay | Initial value: 0.0, range: 0.0-99.9 |
| **0185** | **40186** | Decoupling uplink switch | Initial value: 0,1: on 0: off |
| **0186** | **40187** | Delay before decoupling up | Initial value: 0.0, range: 0.0-99.9 |
| **0187** | **40188** | Decoupling up time | Initial value: 0.0, range: 0.0-99.9 |
| **0188 ~ 0199** | **40189 ~ 40200** | Reserve | |
| Weighing Parameters 1 | | | |
| **0200** | **40201** | PWR-ON Zero | Initial value: 0,1: on 0: off |
| **0201** | **40202** | Zero Range | Initial value: 50, range: 1-99 Unit: % |
| **0202** | **40203** | Stable range | Initial value: 2, stability range (0~99. Optional) Unit:. |
| **0203** | **40204** | Stable time | Initial value: 0.3 seconds; Range: 0.1 to 9.9 |
| **0204** | **40205** | TrZero Range | Initial value: 0, range: 0-9 Units:. |
| **0205** | **40206** | TrZero time | Initial value: 2.0; Range: 0.1~99.9s. |
| **0206** | **40207** | Result Check Filter | Initial value: 7, range: 0-9 |
| **0207** | **40208** | Secondary filter switch | Initial value: 1,1: on 0: off |
| **0208** | **40209** | **A/D** Sample Rate | Initial value :1, 0:120; 1:240; 2:4800; 3:960 |
| **0209 ~ 0214** | **40210 ~ 40215** | Reserved | |
| Weighing Parameters 2 | | | |
| **0215** | **40216** | PreFill Zero Interval | Initial value: 0, range: 0-99 |
| **0216** | **40217** | Result Check Mode | Initial value: 1<br>0: Judged stable value; 1: delay setting |
| **0217** | **40218** | There is a bucket set weight hold switch | Initial value :0; Range: 0: Off; 1: On |
| **0218** | **40219** | Manual DISC To ACUM | Initial value :0; Range: 0: Off; 1: On |
| **0219** | **40220** | Manual discharge judge pinch bag switch | Initial value :0; Range: 0: Off; 1: On |
| **0220** | **40221** | Unload real time detection switch | Initial value :0; Range: 0: Off; 1: On |
| **0221** | **40222** | Gross/net weight packing pattern (no bucket) | Initial value: 1 (net weight)<br>0: Gross weight packing pattern without bucket scale<br>1: no bucket scale net weight packaging mode |
| **0222** | **40223** | Dynamic filter switch | Initial value :1; Range: 0: Off; 1: On The following parameters are valid only after the switch is on. |

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| **0223** | **40224** | Filling Filter | Initial value: 4, range: 1 ~ 9 |
| **0224** | **40225** | Result Check Filter | Initial value: 7, range: 1 to 9 |
| **0225** | **40226** | Discharge Filter | Initial value: 3, range: 1 ~ 9 |
| **0226** | **40227** | Adaptive grade | Initial value: 3; Range: 1 to 5 |
| **0227** | **40228** | Adaptive switch | Initial value: 0; Range: 0 to 2<br>Select 0: Off; 1: double speed; 2: triple speed. |
| **0228 ~ 0229** | **40229 ~ 40230** | reserve | |
| System Maintenance - scale body property parameters | | | |
| **0230** | **40231** | Scale structure | Initial value: 0; 0: with bucket, 1: without bucket, 2: loose material |
| **0231** | **40232** | Working mode | Initial value: 0<br>0: There are dou AB double scales,<br>1: there is A single bucket A scale,<br>2: there is a separate B scale,<br>3: Double bucket double pocket AB independent,<br>4: Double bucket double bag AB combination,<br>5: No bucket AB independent,<br>6: No bucket AB combination.<br>7: bulk material separate A scale,<br>8: bulk material separate B scale,<br>9: bulk material AB independent,<br>10: Bulk AB interlock.<br>Write 0-4 with buckets, 5-6 without buckets, 7-10 for bulk material |
| **0232** | **40233** | AB target values are set separately | Initial value: Off;<br>Off: AB share; On: AB target value can be set to different weights |
| **0233** | **40234** | Filling control method | Initial value: 1; 0: alone, 1: combined |
| **0234** | **40235** | Double scale loose bag pattern | Initial value: 0<br>0: Off;<br>1. At the same time loose bag normal mode,<br>2. Simultaneously loosen bag fast mode |
| **0235-0236.** | **40236-40237** | Single bucket maximum capacity | Weight value written range: ≤ maximum range |
| **0237 ~ 0240** | **40238 ~ 40241** | Reserved | |
| **0241** | **40242** | Manual Unlock Bag switch | Initial value :0; Range: 0: Off; 1: On |
| **0242** | **40243** | Allow loose bag switch when running | Initial value :0; Range: 0: Off; 1: On |
| **0243** | **40244** | Main engine discharge interlock switch | Initial value :0; Range: 0: Off; 1: On |
| **0244** | **40245** | Start clear number of times | Initial value :**0,** range :**0 to 9.** |
| **0245** | **40246** | Delay before clearing | Initial value :**0s,** ranging **from 0.0 to 9.9s.** |
| **0246 ~ 0249** | Reserved | | |
| Peripheral parameters - Beat-bag parameters (1) | | | |
| **0250** | **40251** | Patting Bag Mode | Initial value: 0, there is a bucket can write 0/2; No bucket can write 0/1/2/3;<br>0: Turn off the patting bag function;<br>1: pat the bag only in the feed;<br>2: Pat the bag only after the set value;<br>3: Beat the bag after adding and setting the value. |

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| **0251** | **40252** | Pat times in filling | Initial value: 0, range: 00 ~ 9 9 |
| **0252** | **40253** | Pat bags after valuing | Initial value: 4, range: 00 ~ 9 9 |
| **0253** | **40254** | Pat bag before delay | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0254** | **40255** | Pat bag effective time | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0255** | **40256** | Pat bag ineffective time | Initial value: 0.5 seconds, ranging from 0.0 to 99.9 |
| **0256** | **40257** | Extra pat bag effective time | Initial value: 0.0 seconds, range: 0.0 ~ 99.9 |
| **0257-0258.** | **40258-40259.** | Pat bag initial weight | Weight value written range: ≤ maximum range |
| Peripheral parameters - Coding parameters (2) | | | |
| **0259** | **40260** | Code switch | Initial value :0; Range: 0: Off; 1: On |
| **0260** | **40261** | Coding start delay | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0261** | **40262** | Coding Duration Timer | Initial value: 0.5 seconds, range: 0.0 ~ 99.9 |
| **0262** | **40263** | Allow Fill/Discharge When Coding | Initial value: 0<br>0: Allow to start unloading output or charging output during the coding process;<br>1: the unloading output or charging output is not allowed to start during the coding process |
| Peripheral parameters - double bag with bucket, no bucket mode conveyor parameters (3) | | | |
| **0263** | **40264** | Conveyor switch | Range :0-3; Initial value: 0<br>0: Close the conveyor<br>Level 1:1 conveyor<br>2:2 stage conveyor<br>3:3 Stage conveyor |
| **0264** | **40265** | Conveyor start-up delay | Initial value: 0.5 seconds, range 0-99.9 |
| **0265** | **40266** | Conveyor run time | Initial value: 4.0 seconds, range 0-99.9 |
| **0266** | **40267** | B Delayed Before Starting Next Filling | Initial value: 2.0 seconds, range 0-9.9 |
| Peripheral Parameters - Print Parameters (4) | | | |
| **0267** | **40268** | Automatic print switch | Initial value: 0,1: on 0: off |
| **0268** | **40269** | Print Format | Initial value: 0<br>0:24 column print<br>1:32 column print |
| **0269** | **40270** | Print language | Initial value: 0,1: English 0: Chinese |
| **0270** | **40271** | Print the number of lines of paper run | Initial value: 3, 0-9 |
| Peripheral Parameters - Sewing machine parameters (5) | | | |
| **0271** | **40272** | Sewing machine start delay | 0.0~99.9s Default: 0.5 |
| **0272** | **40273** | Sewing machine output valid time | 0.0~99.9s Default: 0.5 |
| **0273** | **40274** | Cutter output valid time | 0.0 to 99.9s The default value is 0.5 |
| **0274** | **40275** | Delay before stopping the sewing machine | 0.0~99.9s Default: 0.5 |
| Peripheral parameters - Discharge vibration parameters (6) | | | |
| **0275** | **40276** | DISC Shaking ON/OFF | 0:OFF; 1: DISC Shaking Independent； 2: DISC Door Shaking , 0 by default |
| **0276** | **40277** | Discharge valid time | 0.0~9.9, default 0.5 |

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| **0277** | **40278** | Discharge patting valid time | 0.0 to 9.9, default 0.5 |
| **0278** | **40279** | Discharge patting invalid time | 0.0 to 9.9, default 0.5 |
| **0279** | **40280** | Discharge patting times | 0 to 99, default 10 |
| Peripheral parameters - Timeout alarm parameters (7) | | | |
| **0280** | **40281** | Fill, DICS overtime ON/OFF | 0 ~1 Default 0 |
| **0281** | **40282** | **A** coarse filling overtimer | 0.0~99.9s default 5.0 |
| **0282** | **40283** | **A** medium filling overtimer | 0.0 to 99.9s defaults to 5.0 |
| **0283** | **40284** | **A** fine filling over-timer | 0.0~99.9s default 5.0 |
| **0284** | **40285** | **A** DISC overtimer | 0.0~99.9s default 5.0 |
| **0285** | **40286** | B coarse filling overtimer | 0.0~99.9s default 5.0 |
| **0286** | **40287** | B medium filling overtimer | 0.0 to 99.9s defaults to 5.0 |
| **0287** | **40288** | B fine filling over-timer | 0.0~99.9s default 5.0 |
| **0288** | **40289** | B DISC overtimer | 0.0~99.9s Default 5.0 |
| **0289** | **40290** | Cutter Start Delay Timer | 0.0~99.9s default is 0.5 |
| **0290** | **40291** | Sewing ON/OFF | Initial value: 0; 0: off, 1: on |
| **0291** | **40292** | Sewing de-shaking timer | Initial value: 0.3, range: 0-99.9s |
| **0292** | **40293** | Tractor switch | Initial value: 0; 0: off, 1: on |
| **0293** | **40294** | Handle after loading timeout | Initial value: 2; Range: 0 to 2 |
| **0294-0295.** | **40295-40296.** | Feed timeout lower limit | Initial value: 0; Range: 0 ~ Max range; |
| **0296** | **40297** | Disposal after discharge timeout | Initial value: 2; Range: 0 to 2; |
| **0297** | **40298** | Conveyor 2/3 maximum running time | Initial value: 30.0, range: 0-99.9s |
| **0298 ~ 0299** | **40299 ~ 40300** | Reserved | |
| Communication Settings - Serial 1 Parameter Settings (1) | | | |
| **0300** | **40301** | ID number | Scale number. Use broadcast (0xFF) to modify the current I. |
| **0301** | **40302** | Communication method | Initial value: Modbus-RTU<br>0: Modbus-RTU;<br>1: print<br>2: Continuous mode<br>3: Re-ContA<br>4: Re-ContB |
| **0302** | **40303** | Baud rate | Range: 0: 9600; 1: 19,200; 2: 38,400; 3: 57600; 4:115200<br>Default: 2 (38400) |
| **0303** | **40304** | Data format | Range: 0: 8-E-1; 1: 8-N-1; 2: 7-E-1; 3: 7-N-1)<br>Default: 0 (8-E-1) |
| **0304** | **40305** | High-low words | MO.BUS double word registers store sequential selection.<br>Range: 0-1 (0: high word before low word after; 1: Low word in front of high word after)<br>Default: 0 (high word before low word after) |

| Communication Settings - Serial Port 2 Parameter Settings (2) | | | |
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| **0305** | **40306** | ID | Scale number. Use broadcast (0xFF) to modify the current I. |
| **0306** | **40307** | Communication method | Initial value: Modbus-RTU<br>0: Modbus-RTU;<br>1: print<br>2: Continuous mode<br>3: Re-ContA<br>4: Re-ContB |
| **0307** | **40308** | Baud rate | Range: 0: 9600; 1: 19,200; 2: 38,400; 3: 57600; 4:115200<br>Default: 2 (38400) |
| **0308** | **40309** | Data format | Range: 0: 8-E-1; 1: 8-N-1; 2: 7-E-1; 3: 7-N-1<br>Default: 0 (8-E-1) |
| **0309** | **40310** | High-low words | Range: 0: High word before low word after; 1: Low character in front of high character after<br>Default: 0 (high word before low word after) |
| Print cumulative | | | |
| **0310** | **40311** | Print total ACUM | Read as 0; Write 1 to print total cumulative |
| **0311** | **40312** | Print recipe Accumulations | Read to 0<br>Write 0 to print the current recipe cumulative<br>Write 1-40 to print the corresponding recipe cumulative<br>Write 41 to print all recipe accumulations |
| **0312** | **40313** | Print user accumulations | Read as 0<br>Write 100 and print the current user cumulative<br>Write 0-9 and print the corresponding user cumulative<br>Write 101 and print all users cumulative |
| **0313-0319** | Reserved | | |
| factory data reset | | | |
| **0320** | **40321** | factory data reset | 8800 Restore all parameters to factory Settings (including scale parameters)<br>8801 Restore calibration<br>8802 Restore weighing parameters<br>8803 Restore recipe parameters<br>8804 Restore IO definition<br>8805 Perform backup<br>8806 Perform restore<br>Read return 0 |
| Switch quantity test parameter entry | | | |
| **0321** | **40322** | Start/end switch quantity test | Write 1 Start the switch quantity test.<br>Write 0 to exit the switch quantity test state.<br>Write to stop state<br>Read: Returns the status of the current volume test switch |
| **0322** | **40323** | Enter the switch quantity test | Write: Write is not allowed<br>Read: Input from low to high corresponding to ports IN1 to 12, where 1 indicates valid input and 0 indicates invalid input. |

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| **0323-0324** | **40324-40325** | Output switching quantity test | Write: The test switch can be written when the switch is open, and the corresponding ports OUT1~16 output from low to high respectively. 1 indicates that the output is valid, 0 indicates that the output is invalid.<br>Read: Returns the status of the current output switch quantity port, corresponding to the output of ports OUT1~16 from low to high, 1 indicates that the output is valid, 0 indicates that the output is invalid. |
| **0325-0349** | Reserved | | |
| Switch quantity Custom parameter entry | | | |
| **0350** | **40351** | Switch quantity input port 1 Defined | Write:<br>Write the function code corresponding to the switch quantity content. If IN is defined as run, 1 should be written IN the corresponding register in<br>Read:<br>Returns the current switch quantity custom status |
| **0351** | **40352** | Switch quantity input port 2 Defined | |
| **0352** | **40353** | Switch quantity input port 3 Defined | |
| **0353** | **40354** | Switch quantity input port 4 Defined | |
| **0354** | **40355** | Switch quantity input port 5 Defined | |
| **0355** | **40356** | Switch quantity input port 6 Defined | |
| **0356** | **40357** | Switch quantity input port 7 Defined | |
| **0357** | **40358** | Switch quantity input port 8 Defined | |
| **0358** | **40359** | Switch quantity input port 9 Defined | |
| **0359** | **40360** | Switch quantity input port 10 Defined | |
| **0360** | **40361** | Switch quantity input port 11 Defined | |
| **0361** | **40362** | Switch quantity input port 12 defined | |
| **0362** | **40363** | Switching quantity Output port 1 Defined | Write:<br>Write the function code corresponding to the switch quantity content. If OUT is defined as run, 1 should be written in the corresponding register of OUT<br>Read:<br>Returns the current switch quantity custom status |
| **0363** | **40364** | Switch quantity output port 2 Defined | |
| **0364** | **40365** | Switching quantity output port 3 Defined | |
| **0365** | **40366** | Switching quantity output port 4 Defined | |
| **0366** | **40367** | Switch quantity Output port 5 Defined | |
| **0367** | **40368** | Switch quantity output port 6 defined | |
| **0368** | **40369** | Switch quantity Output port 7 Defined | |
| **0369** | **40370** | Switching quantity Output port 8 Defined | |
| **0370** | **40371** | Switching quantity Output port 9 Defined | |
| **0371** | **40372** | Switch quantity output port 10 Defined | |
| **0372** | **40373** | Switch quantity output port 11 Defined | |
| **0373** | **40374** | Switch quantity output port 12 Defined | |
| **0374** | **40375** | Switching quantity Output port 13 defined | |
| **0375** | **40376** | Switch quantity Output port 14 defined | |
| **0376** | **40377** | Switch quantity Output port 15 defined | |
| **0377** | **40378** | Switch quantity Output port 16 defined | |
| **0378-0399** | reserve | | |
| 40 recipe target value parameter items (readable and writable) | | | |
| **0400-0401** | **40401-40402** | Recipe 1 Target value | Initial value: 0 |
| **0402-0403** | **40403-40404** | Recipe 2 Target value | Initial value: 0 |
| ... | | ... Sequential read/write 3-39 target values | |
| **0478-0479** | **40479-40480** | Recipe 40 target value | Initial value: 0 |
| 0480-0499 | Reserved | | |
| 40 Formula A scale Target value parameter items (readable and writable) | | | |
| **0500-0501** | **40501-40502** | Formula 1A target value | Initial value: 0 |
| **0502-0503** | **40503-40504** | Formula 2A target value | Initial value: 0 |
| ... | | ... Read/write 3A-39A target values sequentially | |
| **0578-0579** | **40579-40580** | Recipe 40A target value | Initial value: 0 |
| **0580-0599** | Reserved | | |

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| 40 Formula B scale target value parameter items (readable and writable) | | | |
| **0600-0601** | **40601-40602** | Formula 1B Target value | Initial value: 0 |
| **0602-0603** | **40603-40604** | Formula 2B target value | Initial value: 0 |
| ... | | ... Sequential read/write 3B-39B target values | |
| **0678-0679** | **40679-40680** | Formula 40B target value | Initial value: 0 |
| **0680-0699** | Reserved | | |
| 40 recipe cumulative weight parameter items | | | |
| **0700-0701** | **40701-40702** | Recipe 1 Add up the weight | |
| **0702-0703** | **40703-40704** | Recipe 2 Add up the weight | |
| ... | | ... Sequential readout user 3-8 cumulative weight data | |
| **0778-0779** | **40779-40780** | Recipe 40 Cumulative weight | |
| **0780-0799** | Reserved | | |
| 40 recipe cumulative packet number parameter entries | | | |
| **0800-0801** | **40801-40802** | Recipe 1 Cumulative packet number (write 0 to clear the cumulative weight and packet number of this recipe) | |
| **0802-0803** | **40803-40804** | Recipe 2 Cumulative packet number (write 0 to clear the cumulative weight and packet number of this recipe) | |
| ... | ... | Read the user 3-8 cumulative packet count data sequentially | |
| **0878-0879** | **40879-40880** | Recipe 40 Cumulative packet number (write 0 to clear the cumulative weight and packet number of this recipe) | |
| **0880-0899** | reserve | | |
| 10 users cumulative weight | | | |
| **0900-0901** | **40901-40902** | User 0 Accumulated weight (write 0 to clear accumulated weight and number of packets for this user) | |
| **0902-0903** | **40903-40904** | User 1 Cumulative weight (write 0 to clear this user cumulative weight and number of packets) | |
| **0904-0905** | **40905-40906** | User 2 Cumulative weight (write 0 to clear this user cumulative weight and number of packets) | |
| | | Sequential readout user 3-8 cumulative weight data | |
| **0918-0919** | **40919-40920** | Accumulated weight of user 9 (Write 0 to clear the accumulated weight and number of packets of the user) | |
| **0920-0949** | Reserved | | |
| 10 user accumulative times | | | |
| **0950-0951** | **40951-40952** | User accumulated count 0(Write 0 to clear accumulated weight and number of packets for this user) | |
| **0952-0953** | **40953-40954** | User accumulated count 1(write 0 to clear accumulated weight and number of packets for this user) | |
| **0954-0955** | **40955-40956** | User accumulated count 2(write 0 to clear accumulated weight and number of packets for this user) | |
| | | Read the user's cumulative count data 3-8 in sequence | |
| **0968-0969** | **40969-40970** | User accumulated count 9(Write 0 to clear accumulated weight and number of packets for this user | |
| **0970-0999** | **40971-41000** | Reserved | |
| **1000** | **41001** | Feeding mode: 0: Pneumatic (default); 1: Electric | |
| **1001** | **41002** | Generator number: 0 (default); Range: 0-4 Optional | |
| **1002** | **41003** | A scale feeding stepper motor frequency: 1-50000 optional; Initial value: 12000 | |
| **1003-1004** | **41004-41005** | A scale feed off to slow add the number of pulses required; Range: 1-60000 | |
| **1005-1006** | **41006-41007** | A scale feed off to number of pulses needed to add | |
| **1007-1008** | **41008-41009** | A scale feed off to fast add number of pulses required | |
| **1009** | **41010** | A Scale feed door switch motor rotation direction signal status | |
| **1010** | **41011** | B balance charging stepper motor frequency | |
| **1011-1012** | **41012-41013** | B Scale feed off to slow add number of pulses required | |

| | | |
|---|---|---|
| **1013-1014** | **41014-41015** | B Scale feed off to add the required number of pulses |
| **1015-1016** | **41016-41017** | B scale feed off to fast add the number of pulses required |
| **1017** | **41018** | B Scale feed door switch motor rotation direction signal status |
| **1018** | **41019** | A Scale feed motor start frequency |
| **1019** | **41020** | A Scale feed motor acceleration time |
| **1020** | **41021** | A Scale feed motor deceleration time |
| **1021** | **41022** | B Scale feed motor start frequency |
| **1022** | **41023** | B Scale feed motor acceleration time |
| **1023** | **41024** | B Scale feed motor deceleration time |
| **1024** | **41025** | A Scale running time when the feed door is opened to the fast feed position (ordinary motor) |
| **1025** | **41026** | A Scale the running time when the charging door is opened to the adding position |
| **1026** | **41027** | A Scale run time when the charging door is open to the slow loading position |
| **1027** | **41028** | B Scale running time when the feed door is open to the fast feed position |
| **1028** | **41029** | B Scale the running time when the charging door is opened to the adding position |
| **1029** | **41030** | B The running time when the loading door is opened to the slow loading position |
| **1030** | **41031** | Extra time for charging doors to close |
| **1031** | **41032** | Motor feed reverse logic door opening |
| **1032** | **41033** | Clip bag pattern |
| **1033** | **41034** | A scale pocket clip frequency (stepper motor) |
| **1034** | **41035** | A Scale loose bag frequency |
| **1035-1036** | **41036-41037** | A Number of pulses required for the balance motor to change from loose bag state to pinch bag state |
| **1037** | **41038** | A Signal status of motor rotation direction when pocket clamping action |
| **1038** | **41039** | B Scale pocket motor frequency |
| **1039** | **41040** | B Scale loose bag motor frequency |
| **1040-1041** | **41041-41042** | B Balance the number of pulses required by the motor from loose bag state to pocket state |
| **1042** | **41043** | B Balance pocket action motor rotation direction signal status |
| **1043** | **41044** | A Pocket motor starting frequency |
| **1044** | **41045** | A Pocket motor acceleration time |
| **1045** | **41046** | A Pocket motor deceleration time |
| **1046** | **41047** | B Pocket motor starting frequency |
| **1047** | **41048** | B Bag motor acceleration time |
| **1048** | **41049** | B Pocket motor deceleration time |
| **1049** | **41050** | Loose bag time (regular motor) |
| **1050** | **41051** | Loose bag process times out |
| **1051** | **41052** | Bag clamping process times out |
| **1052** | **41053** | Clip loose bag in place signal type |
| **1053** | **41054** | Discharge pattern |
| **1054** | **41055** | A scale discharge door opening motor frequency (stepper motor) |
| **1055** | **41056** | A Scale discharge door close motor frequency |
| **1056-1057** | **41057-41058** | A Number of pulses required for the balance motor to change from closed state to switched state |
| **1058** | **41059** | A Signal status of motor rotation direction when open door unloading action |
| **1059** | **41060** | B Scale discharge door opening motor frequency |
| **1060** | **41061** | B Scale discharge door close motor frequency |

| | | | |
|---|---|---|---|
| **1061-1062** | **41062-41063** | B Balance the number of pulses required by the motor from closed state to open state | |
| **1063** | **41064** | B Signal status of motor rotation direction when the scale opens the door | |
| **1064** | **41065** | A Discharge motor starting frequency | |
| **1065** | **41066** | A unloading motor acceleration time | |
| **1066** | **41067** | A Discharge motor deceleration time | |
| **1067** | **41068** | B Discharge motor starting frequency | |
| **1068** | **41069** | B Unloading motor acceleration time | |
| **1069** | **41070** | B Unloading motor deceleration time | |
| **1070** | **41071** | A scale discharge motor open door signal output time (ordinary motor) | |
| **1071** | **41072** | B Scale unloading motor open door signal output time | |
| **1072** | **41073** | Unloading and closing timeout | |
| **1073** | **41074** | Unloading door timeout | |
| **1074** | **41075** | Motor discharge reverse logic switch | |
| **1075** | **41076** | Discharge limit real time detection switch | |
| **1076** | **41077** | Number of the power unit used for the current recipe | |
| Peripheral Parameters - Auxiliary pulse parameters (8) | | | |
| **1079** | **41080** | Auxiliary pulse switch | Initial value: 0,1: on 0: off |
| **1080** | **41081** | Auxiliary Pulse 1 Perform total time | 0.0~999.9s Default 0(if 0, execute all the time) |
| **1081** | **41082** | Auxiliary Pulse 1 Effective time | 0.0~999.9s The default is 10.0s |
| **1082** | **41083** | Auxiliary Pulse 1 Ineffective time | 0.0~999.9s The default is 10.0s |
| **1083** | **41084** | Auxiliary Pulse 2 Perform total time | 0.0~ 999.9s Default 0(if 0, execute all the time) |
| **1084** | **41085** | Auxiliary pulse 2 Effective time | 0.0~999.9s 10.0s by default |
| **1085** | **41086** | Auxiliary pulse 2 Ineffective time | 0.0~999.9s The default is 10.0s |
| **1086** | **41087** | Auxiliary pulse 3 Perform total time | 0.0~999.9 min Default 0(if 0, execute all the time) |
| **1087** | **41088** | Auxiliary pulse 3 Effective time | 0.0 to 999.9 min The default is 10.0 min |
| **1088** | **41089** | Auxiliary pulse 3 Ineffective time | 0.0 to 999.9 min The default is 10.0 min |
| **1089** | **41090** | Auxiliary pulse 4 Perform total time | 0.0~999.9 min Default 0(if 0, execute all the time) |
| **1090** | **41091** | Auxiliary pulse 4 Effective time | 0.0~999.9 min Default 10.0 |
| **1091** | **41092** | Auxiliary pulse 4 Ineffective time | 0.0~999.9 min Default 10.0 |
| Communication Settings - Network Port parameters | | | |
| **1100** | **41101** | High-low words | Initial value 0. Range: 0: AB-CD；1: CD-AB |
| **1101** | **41102** | Port number | Initial value :502; Range 1 to 65535 |
| **1102** | **41103** | IP | IP1 |
| **1103** | **41104** | | IP2 |
| **1104** | **41105** | | IP3 |
| **1105** | **41106** | | IP4 |
| **1106** | **41107** | MAC address | MAC1 |
| **1107** | **41108** | | MAC2 |
| **1108** | **41109** | | MAC3 |
| **1109** | **41110** | | MAC4 |
| **1110** | **41111** | | MAC5 |
| **1111** | **41112** | | MAC6 |
| Logic Programming 1 | | | |

| | | | |
|---|---|---|---|
| **1150** | **41151** | Type | Initial value: 0; Range 0 to 5.<br>0: Off<br>1: Delay switch on<br>2: Delay disconnect<br>3: Delay connected and delay disconnected<br>4: Invalid - Valid jump edge trigger<br>5: Valid - Invalid jump edge trigger |
| **1151** | **41152** | Trigger Signal | Initial value: 0; Range: 0 to 64.<br>Optional custom trigger input port, fixed switch input port 1~12, switch output definition, weight value trigger |
| **1152** | **41153** | Trigger the input signal port | Initial value: 0; Range 0 to 12.<br>Select the switch quantity input port 0 to 12 corresponding to the function signal, and the input port -0 means that the function is not defined. |
| **1153** | **41154** | Output signal port | Initial value: 0; Range 0 to 16.<br>Select the switch quantity output port 0 to 16 corresponding to the function signal, and the output port -0 means that the function is not defined. |
| **1154** | **41155** | Delay turn-on time | Initial value: 0; Range: 0 to 99.9. |
| **1155** | **41156** | Delayed disconnect time | Initial value: 0; Range: 0 to 99.9. |
| **1156** | **41157** | Signal output valid time | Initial value: 0; Range: 0 to 99.9. |
| **1157-1158.** | **41158 ~ 41159** | Threshold weight | Initial value: 0; Range: 0~ maximum range |
| **1159 ~ 1169** | **41160 ~ 41170** | Reserved | |
| Logic Programming 2 | | | |
| **1170** | **41171** | Type | Initial value: 0; Range 0 to 5.<br>0: Off<br>1: Delay switch on<br>2: Delay disconnect<br>3: Delay connected and delay disconnected<br>4: Invalid - Valid jump edge trigger<br>5: Valid - Invalid jump edge trigger |
| **1171** | **41172** | Trigger Signal | Initial value: 0; Range: 0 to 64.<br>Optional custom trigger input port, fixed switch quantity input port 1~12, switch quantity output definition, weight value trigger |
| **1172** | **41173** | Trigger input signal port | Initial value: 0; Range 0 to 12.<br>Select the switch quantity input port 0 to 12 corresponding to the function signal, and the input port -0 means that the function is not defined. |
| **1173** | **41174** | Output signal port | Initial value: 0; Range 0 to 16.<br>Select the switch quantity output port 0 to 16 corresponding to the function signal, and the output port -0 means that the function is not defined. |
| **1174** | **41175** | Delay turn-on time | Initial value: 0; Range: 0 to 99.9. |
| **1175** | **41176** | Delayed disconnect time | Initial value: 0; Range: 0 to 99.9. |
| **1176** | **41177** | Signal output valid time | Initial value: 0; Range: 0 to 99.9. |

| | | | |
|---|---|---|---|
| **1177-1178.** | **41178 ~ 41179** | Threshold weight | Initial value: 0; Range: 0~ maximum range |
| **1179 ~ 1189** | **41180 ~ 41190** | Reserved | |
| Logic Programming 3 | | | |
| **1190** | **41191** | Type | Initial value: 0; Range 0 to 5.<br>0: Off<br>1: Delay switch on<br>2: Delay disconnect<br>3: Delay connected and delay disconnected<br>4: Invalid - Valid jump edge trigger<br>5: Valid - Invalid jump edge trigger |
| **1191** | **41192** | Trigger Signal | Initial value: 0; Range: 0 to 64.<br>Optional custom trigger input port, fixed switch quantity input port 1~12, switch quantity output definition, weight value trigger |
| **1192** | **41193** | Trigger the input signal port | Initial value: 0; Range 0 to 12.<br>Select the switch quantity input port 0 to 12 corresponding to the function signal, and the input port -0 means that the function is not defined. |
| **1193** | **41194** | Output signal port | Initial value: 0; Range 0 to 16.<br>Select the switch quantity output port 0 to 16 corresponding to the function signal, and the output port -0 means that the function is not defined. |
| **1194** | **41195** | Delay turn-on time | Initial value: 0; Range: 0 to 99.9. |
| **1195** | **41196** | Delayed disconnect time | Initial value: 0; Range: 0 to 99.9. |
| **1196** | **41197** | Signal output valid time | Initial value: 0; Range: 0 to 99.9. |
| **1197-1198.** | **41198 ~ 41199** | Threshold weight | Initial value: 0; Range: 0~ maximum range |
| **1199 ~ 1209** | **41200 ~ 41210** | Reserved | |
| Logic Programming 4 | | | |
| **1210** | **41211** | Type | Initial value: 0; Range 0 to 5.<br>0: Off<br>1: Delay switch on<br>2: Delay disconnect<br>3: delay connecting and delay disconnecting<br>4: Invalid - Valid jump edge trigger<br>5: Valid - Invalid jump edge trigger |
| **1211** | **41212** | Trigger Signal | Initial value: 0; Range: 0 to 64.<br>Optional custom trigger input port, fixed switch quantity input port 1~12, switch quantity output definition, weight value trigger |
| **1212** | **41213** | Trigger input signal port | Initial value: 0; Range 0 to 12.<br>Select the switch quantity input port 0 to 12 corresponding to the function signal, and the input port -0 means that the function is not defined. |
| **1213** | **41214** | Output signal port | Initial value: 0; Range 0 to 16.<br>Select the switch quantity output port 0 to 16 corresponding to the function signal, and the output port -0 means that the function is not defined. |
| **1214** | **41215** | Delay turn-on time | Initial value: 0; Range: 0 to 99.9 |

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|---|---|---|---|
| **1215** | **41216** | Delayed disconnect time | Initial value: 0; Range: 0 to 99.9 |
| **1216** | **41217** | Signal output valid time | Initial value: 0; Range: 0 to 99.9 |
| **1217-1218.** | **41218 ~ 41219** | Threshold weight | Initial value: 0; Range: 0~ maximum range |
| **1219 ~ 1229** | **41220 ~ 41230** | Reserved | |
| Logic Programming 5 | | | |
| **1250** | **41251** | Type | Initial value: 0; Range 0 to 5.<br>0: Off<br>1: Delay switch on<br>2: Delay disconnect<br>3: Delay connected and delay disconnected<br>4: Invalid - Valid jump edge trigger<br>5: Valid - Invalid jump edge trigger |
| **1251** | **41252** | Trigger Signal | Initial value: 0; Range: 0 to 64.<br>Optional custom trigger input port, fixed switch quantity input port 1~12, switch quantity output definition, weight value trigger |
| **1252** | **41253** | Trigger input signal port | Initial value: 0; Range 0 to 12.<br>Select the switch quantity input port 0 to 12 corresponding to the function signal, and the input port -0 means that the function is not defined. |
| **1253** | **41254** | Output signal port | Initial value: 0; Range 0 to 16.<br>Select the switch quantity output port 0 to 16 corresponding to the function signal, and the output port -0 means that the function is not defined |
| **1254** | **41255** | Delay turn-on time | Initial value: 0; Range: 0 to 99.9. |
| **1255** | **41256** | Delayed disconnect time | Initial value: 0; Range: 0 to 99.9. |
| **1256** | **41257** | Signal output valid time | Initial value: 0; Range: 0 to 99.9. |
| **1257-1258.** | **41258 ~ 41259** | Threshold weight | Initial value: 0; Range: 0~ maximum range |
| **1259 ~ 1269** | **41260 ~ 41270** | Reserved | |
| Logic Programming 6 | | | |
| **1270** | **41271** | Type | Initial value: 0; Range 0 to 5.<br>0: Off<br>1: Delay switch on<br>2: Delay disconnect<br>3: Delay connected and delay disconnected<br>4: Invalid - Valid jump edge trigger<br>5: Valid - Invalid jump edge trigger |
| **1271** | **41272** | Trigger Signal | Initial value: 0; Range: 0 to 64.<br>Optional custom trigger input port, fixed switch quantity input port 1~12, switch quantity output definition, weight value trigger |
| **1272** | **41273** | Trigger input signal port | Initial value: 0; Range 0 to 12.<br>Select the switch quantity input port 0 to 12 corresponding to the function signal, and the input port -0 means that the function is not defined |
| **1273** | **41274** | Output signal port | Initial value: 0; Range 0 to 16.<br>Select the switch quantity output port 0 to 16 corresponding to the function signal, and the output port -0 means that the function is not defined |

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|---|---|---|---|
| **1274** | **41275** | Delay turn-on time | Initial value: 0; Range: 0 to 99.9. |
| **1275** | **41276** | Delayed discon-nect time | Initial value: 0; Range: 0 to 99.9. |
| **1276** | **41277** | Signal output valid time | Initial value: 0; Range: 0 to 99.9. |
| **1277-1278** | **41278 ~ 41279** | Logical threshold weight | Initial value: 0; Range: 0~ maximum range |
| **1279 ~ 1299** | **41280 ~ 41300** | Reserved | |
| **1300** | **41301** | A feed motor power back to zero frequency (initial value: 2000; Range: 1~50000) | |
| **1301** | **41302** | B feed motor power back to zero frequency (initial value: 2000; Range: 1~50000) | |
| **1302** | **41303** | A clip loose bag motor power-on back to zero frequency (initial value: 2000; Range: 1~50000) | |
| **1303** | **41304** | B Clip loose bag motor power-on back to zero frequency (initial value: 2000; Range: 1~50000) | |
| **1304** | **41305** | A discharge motor power back to zero frequency (initial value: 2000; Range: 1~50000) | |
| **1305** | **41306** | B discharge motor power back to zero frequency (initial value: 2000; Range: 1~50000) | |
| **1306** | **41307** | Charging does not require a switch in place | |
| **1307** | **41308** | Loose bag does not require a in place switch | |
| **1308** | **41309** | Unloading does not require a switch in place | |
| **1309-1310** | **1310-1311** | A Feed more pulses | |
| **1311-1312** | **1312-1313** | B Add more pulses | |
| **1313-1314** | **1314-1315** | A Loose bag extra pulse count | |
| **1315-1316** | **1316-1317** | B Loose bag extra pulse count | |
| **1317-1318** | **1318-1319** | A Add more pulses to discharge | |
| **1319-1320** | **1320-1321** | B Add more pulses to discharge | |
| **1321 ~ 1999** | **41322 ~ 42000** | Reserved | |
| Statistical parameters | | | |
| **2000-2001** | **42001-42002** | Total cumulative value 6 places higher | |
| **2002-2003** | **42003-42004** | Total cumulative value 9 places lower | |
| **2004-2005** | **42005-42006** | Total cumulative runs | |
| **2006-2007** | **42007-42008** | The current recipe cumulative value is 6 places higher | |
| **2008-2009** | **42009-42010** | Current recipe cumulative value is 9 places lower | |
| **2010-2011** | **42011-42012** | Current recipe cumulative times | |
| **2012-2013** | **42013-42014** | The current user cumulative value is 6 digits higher | |
| **2014-2015** | **42015-42016** | The current user accumulative value is 9 digits lower | |
| **2016-2017** | **42017-42018** | Cumulative times of the current user | |
| **2018-2019** | **42019-42020** | Recipe 1 Cumulative value 6 places higher | |
| **2020-2021** | **42021-42022** | Recipe 1 Cumulative value is 9 places lower | |
| **2022-2023** | **42023-42024** | Recipe 1 Add up the reps | |
| ... (Read recipe cumulative value sequentially) | | | |
| **2252-2253** | **42253-42254** | Recipe 40 Cumulative value 6 places higher | |
| **2254-2255** | **42255-42256** | The cumulative value of recipe 40 is 9 places lower | |
| **2256-2257** | **42257-42258** | Recipe 40 Cumulative times | |
| **2258-2259** | **42259-42260** | User 1 Cumulative value higher by 6 digits | |
| **2260-2261** | **42261-42262** | User 1 Cumulative value is 9 digits lower | |
| **2262-2263** | **42263-42264** | User 1 Cumulative count | |
| ... (Read user cumulative values sequentially) | | | |
| **2312-2313** | **42313-42314** | The accumulated value of user 10 is six digits higher | |
| **2314-2315** | **42315-42316** | User 10 Cumulative value low by 9 digits | |
| **2316-2317** | **42317-42318** | User 10 Cumulative times | |

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|---|---|---|---|
| **2318** | **42319** | Clear Total cumulative | Write **1** Clear total cumulative. |
| **2319** | **42320** | Clear recipe Accumulations | Write **1-20** to clear the corresponding cumulative data;<br>Write **100** to clear the current recipe accumulations;<br>Write **101** to clear all recipe accumulations. |
| **2320** | **42321** | Clear user accumulations | Read as **0.**<br>Write **0-9** to clear the corresponding user accumulative;<br>Write **100** to clear the current user cumulative;<br>Write **101** to clear all user accumulations. |
| **2321 ~ 29999** | **42322 ~ 43000** | Reserved | |
| **3000-3001** | **43001-43002** | Current traffic | |
| **3002** | **43003** | Flow window length (**1~6)** | |
| **3003** | **43004** | Flow unit; **0: g/h1 : kg/h2 : t/h 3: lb/h** | |
| **3004** | **43005** | Flow decimal point (**0 to 4)** | |
| **3005-3006** | **43006-43007** | 6 digits higher in total shipments **(0 to 99,999)** | |
| **3007-3008** | **43008-43009** | 9 digits lower in total shipped **(0~999999999)** | |
| **3009-3010** | **43010-43011** | Cumulative times of collection and delivery (**0~999999999)** | |
| **3011-3012** | **43012-43013** | Collect and ship cumulative high 6 digits **(0~ 99,999)** | |
| **3013-3014** | **43014-43015** | Collect and ship cumulative low 9 digits **(0~999999999)** | |
| **3015-3016** | **43016-43017** | Total cumulative times of the system (**0~999999999)** | |
| **3017-3018** | **43018-43019** | System total cumulative high 6 digits **(0 to 99,999)** | |
| **3019-3020** | **43020-43021** | System total cumulative low 9 digits **(0 to 999999999)** | |
| **3021 ~ 3999** | reserve | | |

| 16-bit status message address (to use for matching touch screen) | | | | |
|---|---|---|---|---|
| **4000-4001** | **44001-44002** | A Scale the current weight | The weight display of scale A on the meter | |
| **4002** | **44003** | A Scale current weight status | Bit | Instructions |
| | | | D0 | Weight unstable: 0; Stable: 1 |
| | | | D1 | Non-zero: 0; Zero: 1 |
| | | | D2 | The symbol +/- that currently displays weight<br>Plus sign: 0; Negative sign: 1 |
| | | | D3 | Overflow |
| | | | D4 | Weight positive overflow |
| | | | D5 | Weight negative overflow |
| | | | D6 | Sensor positive overflow |
| | | | D7 | Sensor negative overflow |
| | | | D8 | Millivolts stable: 1; Unstable: 0 |
| | | | D9~15 | Reserved |
| **4003** | Reserved | | | |
| **4004-4005** | **44005-44006** | B Scale the current weight | The weight display on the B scale on the meter | |
| **4006** | **44007** | B Scale current weight status | Refer to the current weight status of Scale A | |
| **4007** | **44008** | Reserved | | |
| **4008** | **44009** | AB Scale Common Control Status | D0 | 0: Stop; 1: Run. |
| | | | D1 | Alarm |
| | | | D2 | Batch completed |

| | | | | |
|---|---|---|---|---|
| | | 1 | D3 | Pocket clip |
| | | | D4 | Loading position |
| | | | D5 | Blanking position |
| | | | D6 | For feeding |
| | | | D7 | Underfeed |
| | | | D8 | Patter bag |
| | | | D9 | Conveyor output (no bucket) |
| | | | D10 | Coding output |
| | | | D11 | Seamer output |
| | | | D12 | Tangential output |
| | | | D13 | Auxiliary Pulse 1 |
| | | | D14 | Auxiliary Pulse 2 |
| | | | D15 | Auxiliary Pulse 3 |
| **4009** | **44010** | AB Scale Common Control Status 2 | D0 | Auxiliary Pulse 4 |
| | | | D1 | Relay output 1 |
| | | | D2 | Relay Output 2 |
| | | | D3 | Relay Output 3 |
| | | | D4 | Relay output 4 |
| | | | D5 | Relay output 5 |
| | | | D6 | Relay output 6 |
| | | | D7 | Slow Stop |
| | | | D8 | A bracket up |
| | | | D9 | B Bracket up |
| | | | D10 | Last scale |
| | | | D11~15 | Reserved |
| **4010** | **44011** | A Scale current control status 1 | D0 | A Before adding |
| | | | D1 | A Quick Add |
| | | | D2 | A Canada |
| | | | D3 | A Slow Add |
| | | | D4 | A fixed value |
| | | | D5 | A Unloading |
| | | | D6 | A zero zone |
| | | | D7 | A Out-of-tolerance |
| | | | D8 | A underbalance |
| | | | D9 | A Qualified |
| | | | D10 | A Overunderbalance pause |
| | | | D11 | A scale clip bag (no bucket) |
| | | | D12 | A scale bat bag |
| | | | D13 | A Code output |
| | | | D14 | Gross Net weight Status Gross weight: 0; Net weight: 1 |
| | | | D15 | A Discharge vibration |
| **4011** | **44012** | A balance current control state 2 | D0 | A Weigh up |
| | | | D1 | A Unloading complete |
| | | | D2~15 | Reserved |
| **4012** | **44013** | B Scale current control status 1 | Same as the current control state of scale A 1 | |
| **4013** | **44014** | B Scale current control status 2 | Same as balance A current control state 2 | |
| **4014-4015** | **44015-44016** | Total cumulative weight (0 to 999,999,999) | | |
| **4016-4017** | **44017-44018** | Total cumulative packet count (0 to 999,999,999) | | |

| | | | |
|---|---|---|---|
| **4018-4019** | **44019-44020** | Current recipe Cumulative weight (0~999999999) | |
| **4020-4021** | **44021-44022** | Current recipe cumulative packet number (0 to 999999999) | |
| **4022-4023** | **44023-44024** | User accumulated weight (0~999999999) | |
| **4024-4025** | **44025-44026** | User total number of packets (0 to 999999999) | |
| **4026-4027** | **44027-44028** | A Weight on the previous scale | |
| **4028-4029** | **44029-44030** | B Weigh on the previous scale | |
| **4030** | **44031** | A Scale alarm information | 0. No alarm<br>1. Formula setting is not reasonable, can not start;<br>2. Single bucket maximum capacity is 0, can not start;<br>3. The weight exceeds the clearance range when clearing;<br>4. The weight is unstable when clearing;<br>5. Over and under alarm;<br>6. The target value of a single scale cannot be set to 0. The maximum range is too large.<br>7. The single scale target value is greater than the maximum capacity of a single bucket;<br>8. Weight overflow or sensor overflow when starting;<br>9. Discharge door out of limit<br>10.No pinch bag (manual unloading judgment pinch bag opened, manual unloading unpinch bag will prompt no pinch bag, no pinch bag in operation)<br>11.Zero clearance during operation<br>12.Clear during operation out of range<br>13.Running clear is unstable<br>14. Motor parameter setting is not reasonable (ordinary motor)<br>15. Reservation |
| **4031** | **44032** | B Scale alarm information | |
| **4032-4033** | **44033-44034** | Regular alarm information | **0-** No alarm;<br>**1-** Batch times completed;<br>**2-A** over and underbalance suspended;<br>**3-B** hyperunderbalance pause;<br>**4-A** balance motor charging door closed timeout alarm<br>**5-B** balance motor charging door closing timeout alarm<br>**6-A** balance bag timeout alarm<br>**7-B** balance bag timeout alarm<br>**8-A** balance loose bag timeout alarm<br>**9-B** balance loose bag timeout alarm<br>**10- A** balance unloading and closing time alarm<br>**11- B** balance unloading and closing time alarm<br>**12- A** balance unloading door timeout alarm<br>**13- B** balance unloading door timeout alarm<br>**14- A** balance charging door is not closed in place alarm<br>**15- B** scale charging door is not closed in place to alarm<br>**16- A** balance discharge door is not closed in place alarm<br>**17- B** scale discharge door is not closed in place to alarm<br>**18-** Motherboard and additional version communication abnormal alarm<br>**19- A** scale quickly add timeout alarm<br>**20-** Scale **B** fast overtime alarm<br>**21-** Scale A add timeout alarm<br>**22- B** balance will add overtime alarm |

| | | | |
|---|---|---|---|
| | | | **23-** **A** scale slow and overtime alarm<br>**24-** **B** scale slow and overtime alarm<br>**25-** **A** balance unloading time alarm<br>**26-** Balance B unloading time alarm<br>**27-** **A** balance unloading vibration timeout alarm<br>**28-** Balance **B** unloading vibration timeout alarm |
| **4034** | **44035** | AB Calibration alarm information | 0. Alarm free<br>1. The maximum range is too small<br>2. The maximum range is too large<br>3. Voltage at zero is too high<br>4. Zero point voltage too low<br>5. Mark zero is unstable<br>6. The gain voltage is too high<br>7. Gain voltage is too small<br>8. The scale table is unstable<br>9. Incorrect weight entry<br>10. Resolution is too small after calibration (lack of accuracy)<br>11. Please manually feed and then manually unload (material calibration alarm)<br>12~15 reserve |
| **4035** | **44036** | AB Share Control Status 2 | 0- Serial port read-only Enter 1<br>1- Serial port Read only input 2<br>2- Serial port Read only input 3<br>3- Serial port Read only input 4<br>4- Serial port Read only input 5<br>5- Serial port controllable switch quantity 1<br>6- Serial controllable switch quantity 2<br>7- Serial controllable switch quantity 3<br>8- Serial controllable switch quantity 4<br>9- Serial controllable switch quantity 5<br>10- Done manually<br>11- Stock level shielding<br>12-15. Reserve |
| **4036 ~ 8999** | Reserved | | |
| Compile information (front and back) | | | |
| **9000-9001** | **49001-49002** | Background version Number | Example: 010000 |
| **90029003** | **49003-49004** | Background compile Date | Example: 161201 |
| **9004-9005** | **49005-49006** | Background compile time | Example: 130805 |
| **9006-9007** | **49007-49008** | Attach Version number | Example: 100 |
| **9008-9011** | **49009 ~ 49012** | Reserved | |
| The following is bit readable and writable (read function code: 0x01, write function code: 0x05) | | | |
| Meter controls function coil switch | | | |
| **0000** | **00001** | Automatic zero clearing on power-on | Write 1 on, write 0 off. Read as respective on/off status |
| **0001** | **00002** | Secondary filter switch | |
| **0002** | **00003** | Set weight hold switch | |
| **0003** | **00004** | Manual discharge accumulator switch | |
| **0004** | **00005** | Manual discharge judge pinch loose bag switch | |
| **0005** | **00006** | Net gross weight without bucket | |
| **0006** | **00007** | Dynamic filter switch | |
| **0007** | **00008** | AB Target value Set the switch separately | |
| **0008** | **00009** | Over and under detection switch | |

| | | | |
|---|---|---|---|
| **0009** | **00010** | Overunderbalance pause switch | |
| **0010** | **00011** | Undergap feed switch | |
| **0011** | **00012** | Drop correction switch | |
| **0012** | **00013** | Code switch | |
| **0013** | **00014** | Allow to add discharge switch when typing | |
| **0014** | **00015** | Conveyor switch | |
| **0015** | **00016** | Print switch | |
| **0016** | **00017** | A Adaptive pause | |
| **0017** | **00018** | B Adaptive pause | |
| **0018** | **00019** | Adaptive parameter update switch | |
| **0019** | **0020** | Reserved | |
| **0020** | **00021** | A Clear zero | Only 1 can be written to this address. Read as 0 |
| **0021** | **00022** | A Manual discharge | |
| **0022** | **00023** | A Slow add manually | |
| **0023** | **00024** | A Pinch loose bag | |
| **0024** | **00025** | A Feed manually | |
| **0025** | **00026** | A Add by hand | |
| **0026** | **00027** | A bracket up | Write 1 on, write 0 off. Read as respective on/off status |
| **0027** | **00028** | B bracket up | |
| **0028-0029** | Reserved | | |
| **0030** | **00031** | B Clear Zero | Only 1 can be written to this address. Read as 0 |
| **0031** | **00032** | B Manual discharge | |
| **0032** | **00033** | B Slow add manually | |
| **0033** | **00034** | B Clip loose bag | |
| **0034** | **00035** | B Feed manually | |
| **0035** | **00036** | B Manually Add | |
| **0036-0039** | **0037-0040** | Reserved | |
| **0040** | **00041** | Runs | This address can only be written to 1. Read as 0 |
| **0041** | **00042** | Scram | |
| **0042** | **00043** | Slow Stop | |
| **0043** | **00044** | Formula selection | |
| **0044** | **00045** | Clear Alarm | |
| **0045** | **00046** | Clear current user accumulation | |
| **0046** | **00047** | Clear all user accumulative | |
| **0047** | **00048** | Clear current recipe cumulative | |
| **0048** | **00049** | Clear all recipe accumulated | |
| **0049** | **00050** | Clear total cumulative | |
| **0050** | **00051** | Reset all | |
| **0051** | **00052** | Calibration reset | |
| **0052** | **00053** | Reset of working parameters | |
| **0053** | **00054** | Recipe parameters reset | |
| **0054** | **00055** | Peripheral parameters reset | |
| **0055** | **00056** | Switch quantity reset | |
| **0056** | **00057** | Perform parameter backup | |
| **0057** | **00058** | Restore backup parameters | |
| **0058** | **00059** | Delete backup parameters | This address can only be written to 1 Delete backup parameters. A read of 1 means there are backup parameters, and a read of 0 means there are no backup parameters |
| **0059** | **00060** | Electric parameter reset | This address can only be written to 1. Read as 0 |
| **0060** | **00061** | Stitching machine input | |

| | | | |
|---|---|---|---|
| **0061** | **00062** | The sewing machine comes to an emergency stop | |
| **0062** | **00063** | Auxiliary Pulse 1 | |
| **0063** | **00064** | Auxiliary Pulse 2 | |
| **0064** | **00065** | Auxiliary Pulse 3 | |
| **0065** | **00066** | Auxiliary Pulse 4 | |
| **0066** | **00067** | Secondary logic parameter reset | |
| **0067** | **00068** | Clear the current recipe parameters | This address can only be written to 1. Read as 0 |
| **0068** | **00069** | Clear batch/receiving-shipping accumulations | This address can only be written to 1. Read as 0 |
| **0069** | **0070** | Clearing Scraps | This address can only be written to 1. Read as 0 |
| **0070** | **0071** | Material level shielding | Write 1 set level shield works, write 0 set level shield does not. Read as material level shield status |
| **0071** | **0072** | Done manually | Write 1 to manually complete valid, can not write 0. Read is manually completed |
| **0072-0079** | Reserved | | |
| Meter control function coil IO test | | | |
| **0080** | **00081** | Switch quantity test switch: Enter the switch quantity test when writing 1; Write 0 then exit. Not writable at run time | |
| **0081** | **00082** | Input port 1 when valid, read as 1; 0 if not valid | Does not take effect when written. |
| **0082** | **00083** | Input port 2 when valid, read as 0; 0 if not valid | |
| **0083** | **00084** | Input port 3, when valid, read as 1; 0 if not valid | |
| **0084** | **00085** | Input port 4, when valid, read as 1; 0 if not valid | |
| **0085** | **00086** | When the input port 5 is valid, read as 1; 0 if not valid | |
| **0086** | **00087** | Read as 1 when input port 6 is valid; 0 if not valid | |
| **0087** | **00088** | Input port 7, when valid, read as 1; 0 if not valid | |
| **0088** | **00089** | Input port 8, when valid, read as 1; 0 if not valid | |
| **0089** | **00090** | Input port 9, when valid, read as 1; 0 if not valid | |
| **0090** | **00091** | Input port 10, when valid, read as 1; 0 if not valid | |
| **0091** | **00092** | Input port 11, when valid, read as 1; 0 if not valid | |
| **0092** | **00093** | Input port 12, when valid, read as 1; 0 if not valid | |
| **0093** | **00094** | When writing 1, output port 1 is valid; When writing 0, output port 1 is not valid. | |
| **0094** | **00095** | Output port 2 is valid when writing 1; When writing 0, output port 2 is not valid. | |
| **0095** | **00096** | Output port 3 is valid when writing 1; When writing 0, output port 3 is not valid. | |
| **0096** | **00097** | Output port 4 is valid when writing 1; When writing 0, output port 4 is not valid. | |
| **0097** | **00098** | Output port 5 is valid when writing 1; When writing 0, output port 5 is not valid. | |
| **0098** | **00099** | Output port 6 is valid when writing 1; When writing 0, output port 6 is not valid. | |
| **0099** | **00100** | When writing 1, output port 7 is valid; When writing 0, output port 7 is not valid. | |
| **0100** | **00101** | When writing 1, output port 8 is valid; When writing 0, output port 8 is not valid. | |
| **0101** | **00102** | When 1 is written, output port 9 is valid. When writing 0, output port 9 is not valid. | |
| **0102** | **00103** | When writing 1, output port 10 is valid; When writing 0, output port 10 is not valid. | |
| **0103** | **00104** | When writing 1, output port 11 is valid; When writing 0, output port 11 is not valid. | |

| | | |
|---|---|---|
| **0104** | **00105** | When writing 1, output port 12 is valid; When writing 0, output port 12 is not valid. |
| **0105** | **00106** | When writing 1, output port 13 is valid; When writing 0, output port 13 is not valid. |
| **0106** | **00107** | When writing 1, output port 14 is valid; When writing 0, output port 14 is not valid. |
| **0107** | **00108** | When writing 1, output port 15 is valid; When writing 0, output port 15 is not valid. |
| **0108** | **00109** | When writing 1, output port 16 is valid; When writing 0, output port 16 is not valid. |
| **0109** | **00110** | Reserve |
| **0110** | **00111** | Write 1, serial port controllable switching quantity output 1 output valid.<br>Write 0, serial port controllable switch output 1 output invalid. |
| **0111** | **00112** | Write 1, serial port controllable switching quantity output 2 output valid.<br>Write 0, serial port controllable switch output 2 output invalid. |
| **0112** | **00113** | Write 1, serial port controllable switching quantity output 3 output valid.<br>Write 0, serial port controllable switch output 3 output invalid. |
| **0113** | **00114** | Write 1, serial port controllable switching quantity output 4 output valid.<br>Write 0, serial port controllable switch output 4 output invalid. |
| **0114** | **00115** | Write 1, serial port controllable switching quantity output 5 output valid.<br>Write 0, serial port controllable switch output 5 output invalid. |

### 5.4 Re-ContA/B protocol

In this way, there is no need to send any command to the weighing display, and the display automatically sends the collected data to the supremacist.
Return data frame format description:

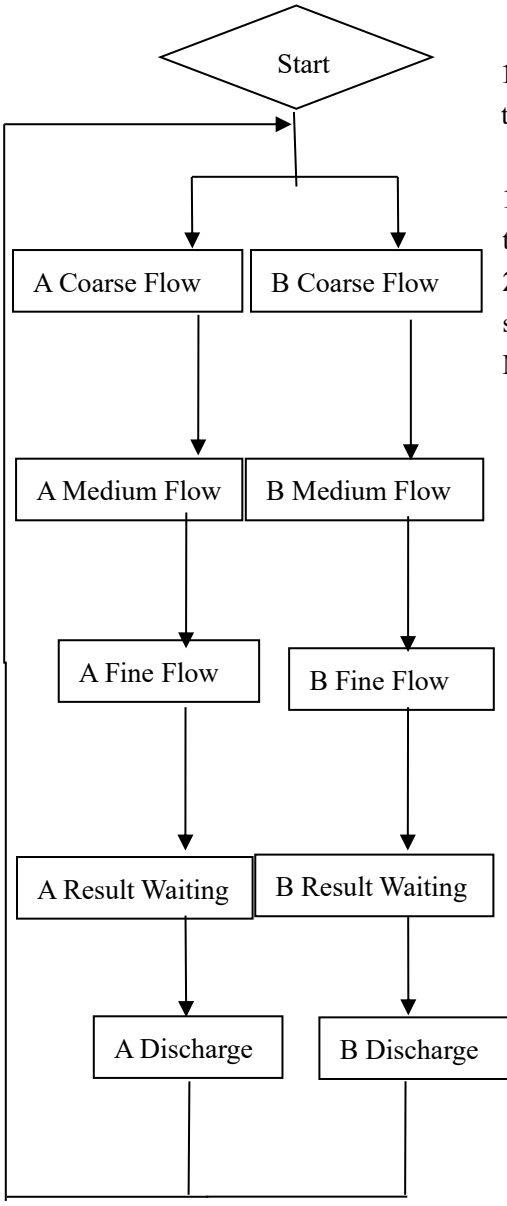
| status | , | Gross/net weight | , | +/- | Weight | Units | **CR** | **LF** |
|---|---|---|---|---|---|---|---|---|
| **2-bit** | **2C** | **47 53/4E 54** | **2C** | **2B/2D** | 7-bit | | **0D** | **0A** |

Where:
Status-- **2** bits, **OL**(overflow):**4FH 4CH; ST**(stable):**53H 54H; US**(unstable):**55H 53H**
Gross/Net weight **-- 2** places**, GS** (gross) **/NT** (net) **: 47** 53/4E **54**
Display value **- 7** digits, including decimal point, high space if no decimal point
Unit -- **2** digits**,** g: **20 67; kg: 6B 67; t: 20 74; lb: 6C 62**
To illustrate:
When the weighing display automatically sends the following frame of data:
**53 54 2C 47 53 2C 2B 30 31 31 2E 31 32 30 6B 67 0D 0A**
**You** can see that the current status is stable, the data value is positive, and the displayed value is **11.120kg.**

# 6.Automate the packaging process

**GMC-X904D packaging** controller can automatically control the whole packaging process of coarse, medium and fine flow, and discharge of all the packaging process. There are bucket scale, no bucket scale, bulk material scale a variety of modes to choose. The structure and working mode of the scale body are set in b3 item of Setup working parameters.

## 6.1 There are bucket AB double scale packaging methods




**1**) Start "Filling Start Delay"; 2) zero operation is determined (Auto Zero Interval)

**1**) Start"A/B COMP Inhibit Timer (Co-F)", no determination for the weight;

**2**) Analyzing Weight: The weight of the material ⩾ single scale target -A / B amount touching scale fast, Co-F closed, Me-F open.

**1**) Start"A/B COMP Inhibit Timer(Me-F)",no determination for the weight ;

**2**) Analyzing Weight: The weight of the material ⩾ single scale target -A / B amount touching scale fast, Me-F closed, Fi-F open.

**1**) Start"A/B COMP Inhibit Timer(Fi-F)",no determination for the weight ;

**2**) Analyzing Weight: The weight of the material ⩾ single scale target -A / B scale Free Fall, Fi-F closed, wait open.

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

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

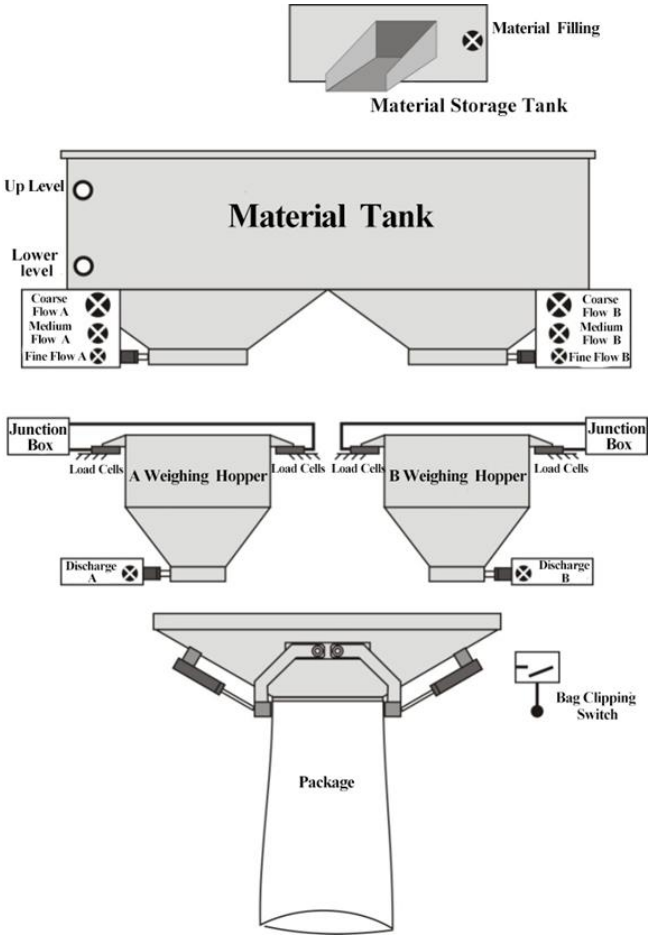
※ In the stopped state, when the external "start" input signal is valid**,** the meter starts to detect whether the target value and the maximum capacity of the single bucket have been set. If the setting is complete, it will run normally, otherwise it will prompt the "target weight is not reasonable" message and cannot be started.

※ ***Target value setting:***

The instrument is compared according to the maximum capacity of a single bucket with the set target value, and the packaging process is carried out according to the comparison result. For details, see the **mode** function description in Chapter **4.1**.

※ ***Over and under judgment***:

When the "over and under ON/OFF " is opened, in a packaging process, when the last weighing process is completed, the system carries out the over error detection, the weight is stable after the output over and under error alarm signal.




The over and under error suspension switch is **"on"**, if the packaging is over or under error, then the instrument pauses the automatic quantitative process, the buzzer buzzes, the window displays the alarm information of "**A**/**B** over and under error suspension", waiting for the user to process, at this time, the switch quantity can be entered "clear alarm" to effectively clear the alarm signal, the instrument will clear the alarm and continue to run. The user can also enter the emergency stop signal to return to the stop state.

※***Unlock bags:***

When the instrument is judged as the last weighing, when the time of "discharge delay" is up, close the discharge and start the "release bag start delay" at the same time. After the delay, if the bag is completed, the bag will be loosened. If the bag is not completed, the bag will be loosened until the bag is completed.

During operation, if the stop input is valid, the instrument will return to the stop state after the completion of this combination weighing.

※ ***Discharge times***

If the target value is an integer multiple of the maximum capacity of a single bucket, then "automatically calculated discharge times" is the target value/maximum capacity of a single bucket. Otherwise, the "automatically calculated number of discharge" is the target value/the maximum capacity of a single bucket +**1**, and the **single weigher target value** is the target value/the automatically calculated number of discharge. After starting, the target value of **A** and **B** can be seen at the bottom of the main interface, and then the scale of **A** and **B** can be discharged in parallel, who first arrives at the quantity who first discharges. A total

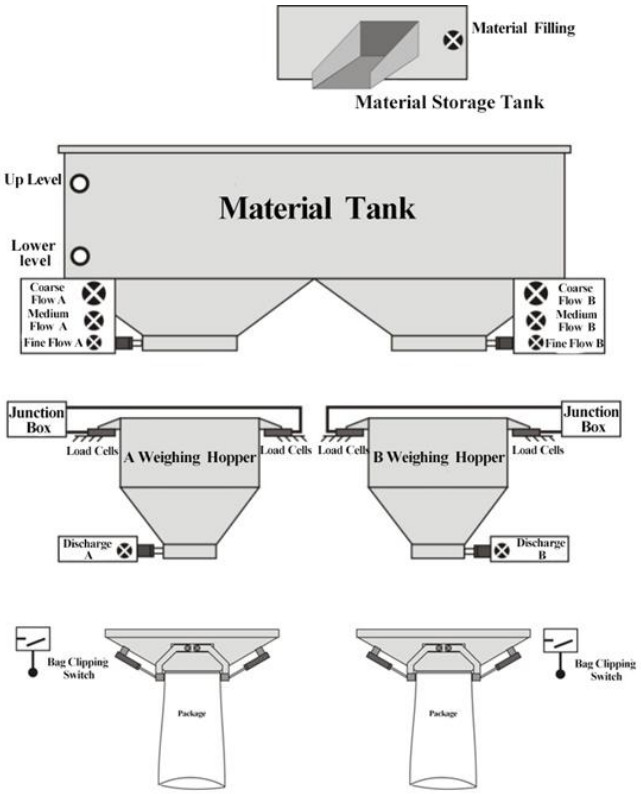
of discharge "automatically calculated discharge times" to loose the bag once.

**If the single weigher target value** is the target value. At this time **A,** B balance alternate discharge, discharge once loose bag once.

**AB** separately set the target value mode, according to their respective set **of A** target value or B target value **to** complete their quantitative process, the unloading process of the two scales is separate, that is**,** when A scale is unloading**, B** scale even if the completion of loading also need to wait for **A** scale to complete unloading, and bag again before unloading.

## 6.2 Separate A scale, B scale packaging method

Under the structure of the scale body with or without A bucket or bulk material structure, the working mode is selected as **A separate A** scale (or separate **B** scale), which is suitable for the situation that only one scale can work due to mechanical failure or other reasons, and there is a scale to complete the packaging process, specifically refer to the **process** of A scale or **B** scale **in** Chapter **6.1**.




## 6.3 Double bucket double bag AB independent packaging method

The structure of the scale body is to be packed with bucket, and the working mode is to be double bucket double bag **AB** independent.

The structure of the scale body is shown in the figure on the right, using two measuring buckets, two clamping bag mechanisms, **AB** scale work alone (in addition to conveyor work, other work does not affect each other)

The packing process is the same as the single bag mode. See Section **6.1.**

## 6.4 Double bucket double clip bag AB combination packing method

The difference between the double bucket double bag **AB** combination mode and the double bucket double bag **AB** independent packaging mode lies in the control logic of the conveyor.

After starting, **B** scale began to feed, **A** scale also began to feed, and wait for **A** and **B** are loose bags (independent way does not need to wait for bucket loose bag), the instrument control conveyor starts, the feeding completed bag transport away, and then you can start the next process after bag clamping.

**Note**: Double bucket packaging uses two metering buckets, two clip bag mechanisms, **AB** scales work independently (in addition to conveyor work, other work does not affect each other)

## 6.5 No bucket double scale combination packaging method

In the bucket-free mode, the material is fed directly from the hopper to the bag through

the charging mechanism (fast, medium and slow), and the weight sampling of the meter measurement control process is completed in the bag (the weighing sensor is installed on the hopper). After the measurement is completed, the instrument control directly loosens the bag. The difference between the bucket-less packaging process and the bucket-packed process is that the sensor is installed on the hopper, and after starting, it needs to complete the bag clamping action before starting the feeding delay to start the feeding process.

The structure of the scale body selects bucket-less packaging, and the working mode is selected as bucket-less **AB** combination. **1**) If the **AB** target value is set as off separately, the target value is the target value of each scale **A** and **B**; **2**) If the target value of **AB** is set to open separately, the target value of **A** and **B** will be the target value of each scale **A** and **B** respectively. All have nothing to do with the maximum capacity of a single bucket, but cannot exceed the maximum measuring range.

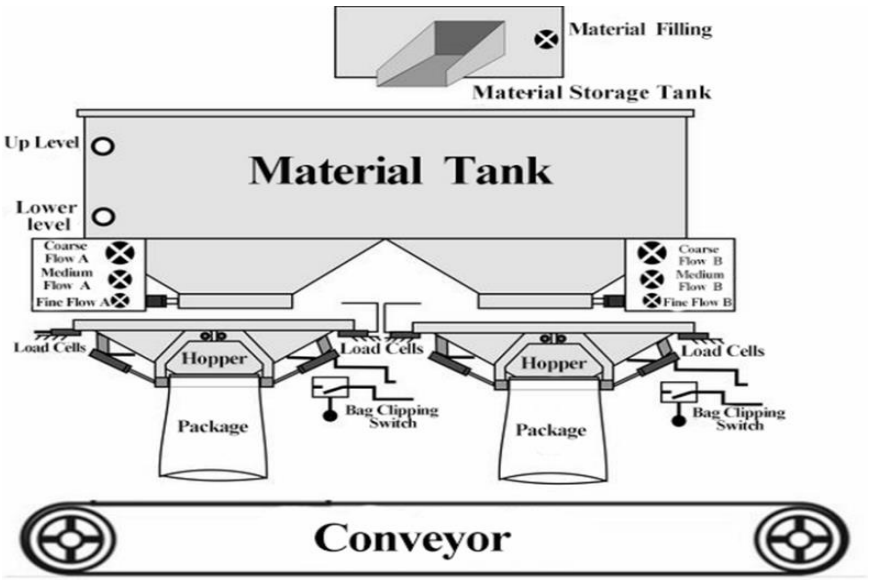
After the start, **B** scale bag began to feed, **A** scale bag also began to feed, and wait for **A** and **B** are loose bag, instrument control conveyor start, the feeding completed bag transport, and then you can start the next process after the bag, if **A** scale bag filling is completed and loose bag, **B** scale has not pinch bag, instrument control conveyor start; If **A** scale is not bagged, **B** scale bag loading completed and bagged, instrument control conveyor start.

## 6.6 No bucket double scale independent packaging method

The structure of the scale body is selected as bucket-free packaging, and the working mode is selected as bucket-free **AB** independent. **1**) If the **AB** target value is set as off separately, the target value is the target value of each scale **A** and **B**; **2**) If the target value of **AB** is set to open separately, the target value of **A** and **B** will be the target value of each scale **A** and **B** respectively. All have nothing to do with the maximum capacity of a single bucket, but cannot exceed the maximum measuring range.

After starting, after any scale is fed and loosened, the instrument will start the conveyor to start conveying.

Its structure is shown in the following figure:




## 6.7 Packing method of bulk materials

**1**) Bulk material **AB** interlock mode: In the running state, the weighing unit **A** is first started to feed the weighing tank (large, medium and small), and the weight sampling of the meter measurement control process is completed in the weighing tank (the weighing sensor

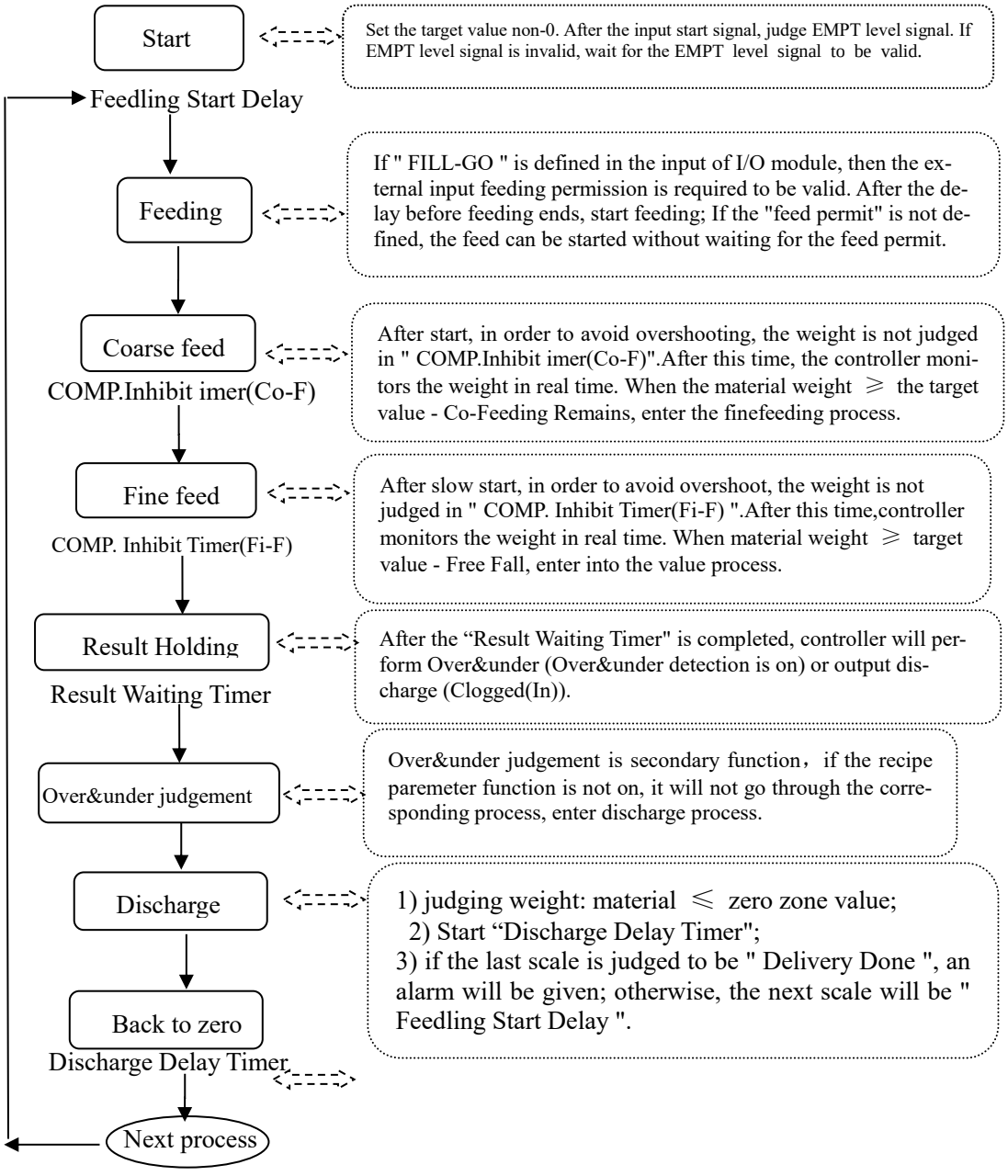
is installed on the weighing tank). After the measurement is completed, the material is discharged through the unloading mechanism under the weighing tank, and the weight value is accumulated. When the **A** weighing unit is unloaded, the **B** weighing unit begins feeding and the weighing process is carried out. The loading/unloading of weighing cells **A** and **B** are interlocked.

**2**) Bulk material **AB** independent mode: **AB** scale can be loaded and unloaded at the same time, no longer interlock.

**3**) Bulk material separate **A** mode: only **A** scale is working

**4**) Bulk material alone Mode B: Only scale B is working

## Process description:



# 7. Motor working process

## 7.1 Motor feeding part

7.1.1 Stepper **motor feeding**

Stepper motor control feeding door switch: the switch quantity involved is: **O31(**Scale A filling pulse output**)/O32 (**Scale A filling direction**)/ O33(**Scale B filling pulse output**)/O34** Scale B filling direction**), I31(**Scale A fill gate closed ready**)/I32 (**Scale B fill gate closed ready**). (I31/I32 signal is determined by the type of in place signal)**.

Take the feeding process of **A** scale as an example:

- Coarse flow process: Instrument control **O32(**Scale A filling direction**)** output to ensure that the motor rotation direction is the direction of opening the door**,** and then **O31(**Scale A filling pulse output**)** output pulse according to the set scale A feeding motor frequency to control the feeding stepper motor to rotate in the direction of opening the door, **O31(**Scale A filling pulse output**)** number reaches the set value to stop the output pulse signal, the feeding door to stop rotating**,** At this time, it is a large investment state. The meter then changes the **O32 (**Scale A filling direction**)** output to the closing direction.
- Medium flow process: **O31(**Scale A filling pulse output**)** outputs pulses according to the set frequency of the charging motor of A scale, controls the charging stepper motor to rotate in the direction of closing the door, stops the output pulse signal after the number of **O31(**Scale A filling pulse output**)** reaches the set value, and the charging door stops rotating. At this time**,** it is the CIC state.
- Fine flow process: **O31(**Scale A filling pulse output**)** output pulses according to the set A scale feeding motor frequency, control the feeding stepper motor to continue to rotate in the direction of the door, **O31(**Scale A filling pulse output**)** number reaches the set value after the output pulse signal stops, the feeding door stops rotating**,** at this time for the small feeding state.
- Filling closing: **O31(**Scale A filling pulse output **t)** according to the set A balance charging motor frequency to output the pulse, control the charging stepper motor continue to rotate in the direction of closing the door, until **I31(**Scale A fill gate closed ready**)** input effective stop output pulse signal, the charging door stop rotating, at this time the charging completely closed. Note: If the closing process time exceeds the charging door closing timeout time set by the charging door closing timeout time, the instrument has not detected **I31(**Scale A fill gate closed ready**),** then the instrument will stop **O31(**Scale A filling pulse output**),** and alarm scale A charging door closing timeout.

7.1.2 General motor feeding

Ordinary motor control charging door switch: the switching quantity involved is: A scale **O43(**Scale A filling gate open**)/O45(**Scale A filling gate closed**), I31(**Scale A fill gate closed ready**),** B scale **O44(**Scale B filling gate open**)/O46 (**Scale B filling gate closed**), I32(**Scale B fill gate closed ready**)**.

Take the feeding process of large and small scale **A** as an example:

- Coarse flow process: **A** scale delay **t1** time after the start of the feeding process. Instrument first makes **A** scale **O43(**Scale A filling gate open**)** signal output effective, effective time for A scale quickly add the opening time, start the rapid feeding process.
- Medium flow process: When **the** weight of the material in the hopper of A scale **is** greater than the target value of A scale, A scale **O45(**Scale A filling gate closed**)** signal output is effective, and the effective time is "A scale fast opening time -A scale open the door time".
- Fine flow process: when the weight of the material in the hopper of A scale is greater than or equal to the target value of A scale - when the advance of A scale, the signal

output of A scale **O45(**Scale A filling gate closed**)** is effective, and the effective time is "A scale adding the opening time -A scale slowly adding the opening time".

- Filling closing: when **the** weight of the material in the hopper of A scale is greater than or equal to the target value **of A** scale -A scale small feed lead, **the O45(**Scale A filling gate closed**)** signal output of A scale is effective until it detects the feed door of A scale in place signal **I31(A feed door closed in place)**.

Note: If the closing process time exceeds the **charging door closing timeout time**, the instrument has not detected **I31(**Scale A filling pulse output**)**, then the instrument will stop **O45(**Scale A filling gate closed**)**, and alarm A scale charging door timeout. Note: When the meter is started, it is necessary to detect whether the charging door and discharge door are in the limit. If they are not in the limit, the alarm will be raised and they cannot be started.

## 7.2 Motor clip bag part

### 7.2.1 Stepper motor clip loose bag

Stepper motor control clip bag: the switch quantity involved is: **O35(**Scale A bag lock/unlock pulse output**)/O36 (**Scale A bag lock/unlock direction signal**)/ O37(**Scale B bag lock/unlock pulse output**)/ O38 (**Scale B bag lock/unlock direction signal**), I33 (**Scale A bag unlocked ready**)/ I34 (**Scale B bag unlocked ready**).** (The **I37**/**I38** signal is determined by the type of the in place signal).

Take **binyES** with metering bucket mode pinch loose bag process as an example:

- Bag clamping process: The instrument controls the output of O36 (A balance bag direction signal) to ensure that the motor rotation direction is the bag direction**,** and then **O35(A bag pulse)** outputs the pulse according to the set A bag motor frequency, and controls the bag stepper motor to rotate in the bag direction. **O35(**Scale A bag lock/unlock pulse output**)** number reaches the set scale A pinch bag required pulse number t**o** stop the output pulse signal**,** at this time the bag mechanism is in the pinch bag state. Then the instrument changes **the** output of O36 (A scale pocket direction signal) to the direction of loosening the bag.
- Bag loosening process: **O35(**Scale A bag lock/unlock pulse output**)** outputs the pulse according to the set A balance bag loosening motor frequency, controls the bag loosening stepper motor to rotate in the direction of bag loosening until the input of I33 (A bag loosening in place) is detected to be effective and stops the output pulse signal, at this time, the bag loosening state. Note: If the bag loosening process time exceeds the set bag loosening process timeout time, the instrument has not detected **I33 (**Scale A bag unlocked ready**),** then the instrument will stop output **O35(**Scale A bag lock/unlock pulse output**),** and alarm A scale bag loosening timeout.

### **7.2.2 Motor** double **limit** pinch pouch release

Ordinary motor double limit control clip bag: the switch quantity involved is: **O9(**Scale A bag locked**)/O47(**Scale A bag unlock**)/O12(**Scale B bag locked**)/O48(**Scale B bag unlock**), I23(**Bag Locked in place**)/I33(**Scale A bag unlocked ready**)/I24(**Scale B bag locked in place**)/ I34(**Scale B bag unlocked ready**)**. (**The I33**/**I34** signal is determined by the type of loose bag in place signal).

Take the process of adding pinch loose bag in metering bucket mode as an example:

- Bag clamping process: the instrument output bag clamping signal **O9(**Scale A bag locked**)** controls the bag clamping motor to rotate in the direction of bag clamping, until the bag in place signal **I23(A** bag in **place)** is detected and the output bag signal **O9(**Scale A bag locked**)** is stopped after the input is effective, and the bag clamping mechanism is in the bag clamping state. Note: If the bag clamping process time exceeds the set bag clamping process timeout time, the instrument has not detected the bag clamping signal **I23(**Bag

Locked in place**)**, then the instrument will stop the output bag clamping signal **O9(**Scale A bag locked**))**, and alarm scale A bag clamping process timeout.

- Loose bag process: instrument output loose bag signal **/O47(**Scale A bag unlock**)** control bag motor to loose bag direction rotation, until detected loose bag signal **I33(A** Scale A bag unlocked ready**)** input effective stop output loose bag signal **/O47(**Scale A bag unlock**)**, at this time the bag clamping mechanism is in the loose bag state. Note: If the loosening bag process time exceeds the set loosening bag process timeout time, the instrument has not detected the loosening bag in place signal **I33(**Scale A bag unlocked ready**)**, then the instrument will stop output loosening bag signal **/O47(**Scale A bag unlock**)**, and alarm scale A loosening bag process timeout.

### 7.2.3 **Motor** single **limit** pinch pouch release

Ordinary motor double output control control clip bag: the switch quantity involved is: **O9(**Scale A bag locked**)/O47(**Scale A bag unlock**)/O12(**Scale B bag locked**)/O48(**Scale B bag unlock**), I23(**Bag Locked **i**n place**)/ I24(**Scale B bag locked ready **)**

Take **binyES** with a metering bucket mode under the clamping bag loosening process as an example:

- Bag clamping process: instrument control **O9(**Scale A bag locked**)** switching output signal, output signal until detected bag in place signal **I23**(A bag in place**)** input is effective, the output signal output is invalid, to achieve equipment bag clamping.
- Loose bag process: instrument control **/O47(**Scale A bag unlock**)** switching quantity output signal, to achieve equipment loose bag, output signal duration for loose bag output, the output signal output is invalid. **Note:** If the bag clamping process time exceeds the set bag clamping process timeout time, the instrument has not detected the bag clamping signal **I23(**Bag Locked in place**)**, then the instrument will stop output **O9(**Scale A bag locked**)**, and alarm scale A bag clamping process timeout.

## 7.3 Motor discharge section

### 7.3.1 Stepping motor discharging

Stepper motor control unloading: The amount of switches involved are: **I25(**Scale A discharge gate closed ready**)/ O39(**Scale A discharge pulse output**)/ O40(A** Scale A discharge direction signal**)**

Take the unloading of **A** scale as an example:

- Unloading door opening process: Instrument control **O40(**Scale A discharge direction signal**)** output, ensure that the motor rotation direction is the direction of opening the door**,** and then **O39(**Scale A discharge pulse output**)** according to the set discharge door motor frequency to output pulse, control the discharge stepper motor rotation to the discharge door direction, The number of **O39**(A balance unloading pulse) reaches the value set by the number of pulse required by A balance unloading to stop the output pulse signal**,** at this time the unloading mechanism is in the open state
- Unloading and closing process: After the discharge door is opened**,** the instrument detects the weight in the hopper if it is lower than near zero, then the discharge delay time is started. After the discharge delay time is over, the instrument changes the output of **O40**(discharge direction signal of A scale) to the closing direction**,** and **O39(**Scale A discharge pulse output**)** outputs the pulse according to the set discharge closing motor frequency to control the discharge stepper motor to rotate in the closing direction. Until the detection of **I25(**Scale A discharge gate closed ready**)** input effective to stop the output pulse signal**,** at this time for the closed state. Note: If the closing process time exceeds the set unloading closing timeout time, the instrument has not detected the closing position signal **I25(**Scale A discharge gate closed ready**),** then the instrument will stop output **O39(**Scale A discharge pulse output**),** and alarm **A** scale unloading and closing timeout.

**7.3.2** Single limit discharge of motor

General motor positive and negative single limit mode control discharge: the amount of switches involved are: **O11(**Scale A discharge**)/O14(**Scale B discharge**)/O49(**Scale A discharge gate closed**)/O50(**Scale B discharge gate closed**), I25(A** Scale A discharge gate closed ready**)/I26(**Scale B discharge gate closed**).**

Take the unloading process of **A** scale as an example:

- Unloading door opening process: At the beginning of the unloading process**,** the instrument outputs the unloading signal **O11(**Scale A discharge**)** to control the unloading motor to rotate in the direction of the unloading door, and continues the unloading motor door opening signal output time set by the effective time of the unloading door output**,** and then closes the unloading signal **O11(**Scale A discharge**)** output.
- The process of unloading the door: After the unloading door is opened, the instrument detects if the weight in the hopper is lower than near zero, then start the unloading delay time, after the unloading delay time is over, output the unloading close signal **O49(**Scale A discharge gate closed**)**, and control the unloading motor to rotate in the unloading close direction. Until it is detected that the discharge door is closed in place signal **I25(A dis-**charge door is closed in place) is input and effective, stop the output discharge door signal **O49(**Scale A discharge gate closed**)**, at this time the discharge door is closed. Note: If the closing process time of the unloading door exceeds the set unloading and closing timeout time of A scale, the instrument does not detect the unloading door closing in place signal **I25**(**A** Scale A discharge gate closed ready**), t**hen the instrument will stop output **O49**(Scale A discharge gate closed), and alarm A scale unloading and closing timeout.

**7.3.3** Motor double limit discharge

Ordinary motor positive and negative rotation double limit mode control discharge: the amount of switches involved are: **O11(**Scale A discharge**)/O14(**Scale B discharge**)/O49(**Scale A discharge gate closed**)/O50(**Scale B discharge gate closed**), I25(A** Scale A discharge gate closed ready**)/ I35(**Scale A discharge gate opened ready**)/I26(**Scale B discharge gate closed**)/ I36(**Scale B discharge gate opened ready**).**

Take the unloading process of scale **A** as an example:

- Unloading door opening process: At the beginning of the unloading process, the instrument outputs the unloading signal **O11(**Scale A discharge**)** to control the unloading motor to rotate in the direction of the unloading door, until it detects that the unloading door is in place signal **I35(**Scale A discharge gate opened ready**)** and stops the output unloading signal **O11(**Scale A discharge**)** after the input is effective. At this time, the unloading door is open. Note: If the unloading door opening process time exceeds the set scale **A** unloading door opening timeout time, the instrument has not detected the unloading door opening in place signal **I35(**Scale A discharge gate opened ready**)**, then the instrument will stop output **O11(**Scale A discharge**)**, and alarm A unloading door opening timeout.
- The process of unloading and closing: After the unloading door is opened, the instrument detects if the weight in the hopper is lower than near zero, then start the unloading delay time. After the unloading delay time is over, output the unloading close signal **O11(**Scale A discharge**)**, and control the unloading motor to rotate in the direction of the unloading close door. Until it is detected that the discharge door is closed in place signal **I25(A** Scale A discharge gate closed ready) is input and effective, stop the output discharge door signal **O11(**Scale A discharge**)**, at this time the discharge door is closed. Note: If the closing process time of the discharge door exceeds the set A discharge door closing timeout time, the instrument does not detect the discharge door closing in place signal **I25**(**A** Scale A discharge gate closed ready**)**, then the instrument will stop output **O11(**Scale A discharge), and alarm A discharge door closing timeout.

**7.3.4** Unidirectional rotation of the motor for one week unloading

Ordinary motor one-way rotation one week single limit way to control discharge: the amount of switches involved are: **O11(**Scale A discharge**)/O14(**Scale B discharge**), I25( A** Scale A discharge gate closed ready**)/ I26(**Scale B discharge gate closed**)**.

Take the unloading process of **A** scale as an example:

- Unloading door opening process: At the beginning of the unloading process, the instrument outputs the unloading signal **O11(**Scale A discharge**)** to control the unloading motor to rotate in the direction of the unloading door, and continues to set the unloading motor door opening signal output time, and then close the unloading signal **O11(**Scale A discharge**)** output.
- Unloading and closing process: After the unloading door is opened, the instrument detects if the weight in the hopper is lower than near zero, then start the unloading delay time, after the unloading delay time is over, output the unloading signal **O11(**Scale A discharge**)**, and control the unloading motor to continue to rotate in the direction of the unloading door. Until it is detected that the discharge door is closed in place signal **I25( A** Scale A discharge gate closed ready) is input and effective, stop the output discharge signal **O11**(Scale A discharge), at this time the discharge door is closed. Note: If the closing process time of the **u**nloading door exceeds the unloading closing timeout time, the instrument does not detect the unloading door closing in place signal **I25**(**A** Scale A discharge gate closed ready**)**, then the instrument will stop output **O11(**Scale A discharge**),** and alarm scale A unloading door timeout.

## 8. Instrument size (mm)