GENERAL MEASURE

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GMC-X904_2

User Manual

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V01.00.01

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

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Contents

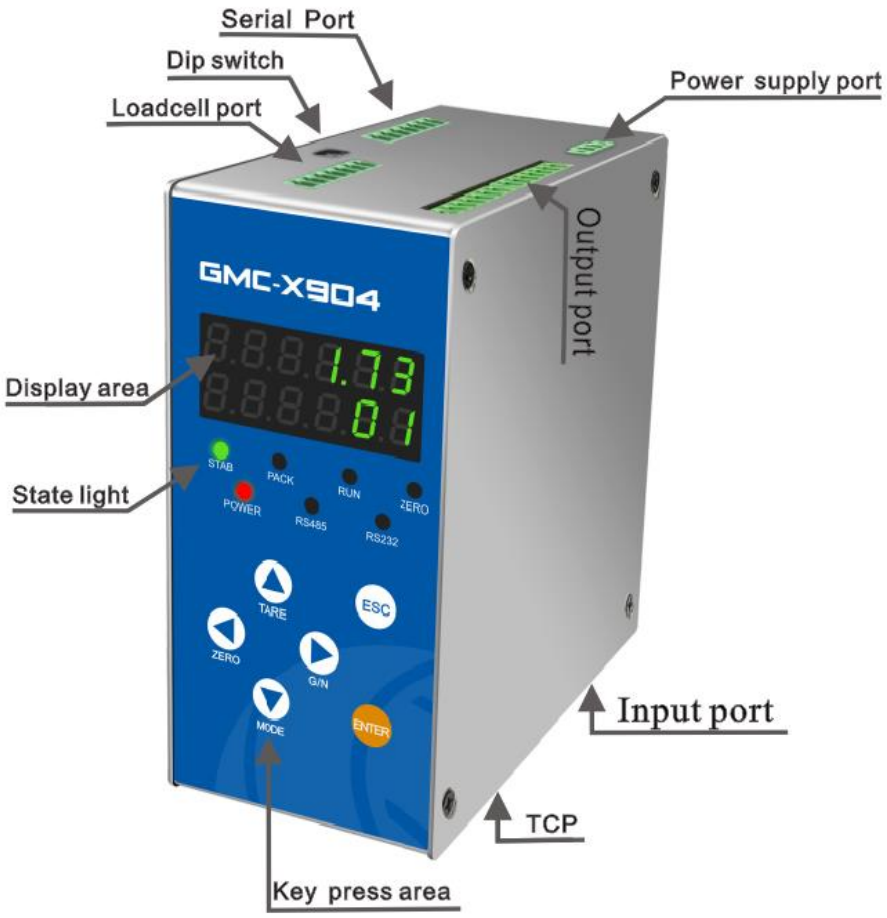
1.Overview

GMC-X9042 Packaging controller is a new type of load control instrument specially developed for single-scale incremental automatic fixed weight packaging scale. 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 fixed weight packaging equipment.

1.1 Functions and features

Shell Type	DIN rail mount(National standard 35mm guide rail),stainless steel housing	
Display	Double row 6-bit display digital tube	
Language	Chinese and English are supported	
Intefaces	**Loadcell interface**	Support 1 way 6-wire analog sensor platform interface, connect up to 40 pieces of 350Ω sensors
	1 way 485 interface	Support modbus RTU, continuous mode, print mode, etc
	1 way 232 interface	
	IO interface	8 input and output control (12 in /16 out), the position of the input and output ports can be customized
	Dual network ports /Single network port	Supports TCP-IP protocol communication
Function Description	➢ Support a variety of scale mode, with hopper, no hopper, jumbo bag, valve scale, PLC mode. Users can choose independently ➢ Rich IO interface, with testing function, convenient packaging scale debugging ➢ Automatic double speed, three speed feeding control, with littlely feeding function ➢ Can store 20 kinds of formula, convenient packaging of different range materials ➢ Feeding control function, convenient control connection between packaging scale and front-end feeding equipment. ➢ Feed speed adaptive function ➢ Automatic drop correction function ➢ Batch setting function ➢ Support a variety of peripheral functions, such as patting bag , coding, sewing machine, conveyor, discharging vibration and so on ➢ Automatic zero tracking function ➢ Multiple digital filtering function ➢ Dual serial port for external serial printer, computer or second monitor ➢ With double network port communication function, easy to communicate with the host computer ➢ Support feeding, discharging and clamping bag motor mode control function	

1.2 Panel Description



Status indicator Instructions:
STAB: stable. When the weight is stable, the indicator lights on**.**
PACK: clamp bag, when the clamp bag output is effective, the indicator will light up; clamp bag output when the bag in place signal is invalid, the indicator light blinks;
RUN: Run, the instrument is in the process of packaging, the indicator lights;
ZERO: zero. When the weight is 0±1/4d, the indicator lights up.
POWER: when the instrument is powered on, the indicator is steady on;
RS485: During 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 end (near the sensor end), the instrument is fixed by pressing 38400, 8-N-1, MODBUS-RTU for data communication. (Note: After changing the dip switch, the instrument panel needs to be restarted to take effect)

Button description：

Keys	Function description
TARE	Value +1/ conversion key, used to switch between parameter items
	Hold down this key for 2 seconds to see the number of batches. Press ZERO in he number of batches interface, the number of batches blinks, and then press ENTER again to clear the current number of batches.
	In the formula display interface, the current formula rECiPE 1 is displayed, press this key to modify the current formula number.
MODE	Scroll Down key
	Hold down this key on the home screen for 2 seconds to set the number of batches
ZERO	Shift left
	Zero key, used to zero weight which is stable and within the zero allowed range
G/N	Turn page/right shift key, which is used to switch between parameters
	Hold down this key for 2 seconds to see the cumulative number/cumulative weight. Press ZERO in the cumulative times/Cumulative weight interface, the cumulative times/cumulative weight blinks, press ENTER again, the current cumulative times/cumulative weight will be cleared.
ESC	Exit key, used to exit the current operation of the instrument/return to the previous menu button.
ENTER	Confirm key, confirm to enter the current option when calibration or parameter setting;
	Data input operation to confirm data and end the operation

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:61mm*132mm*126mm

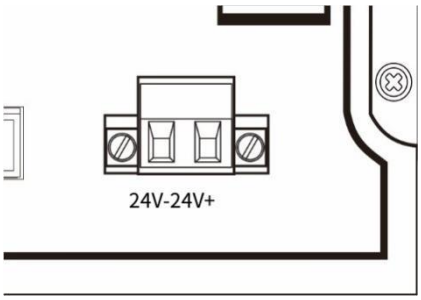
1.3.2 Analog part

Sensor power supply：DC 5V 125mA(MAX)
Input resistance: 10MΩ
Zero adjustment range: 0.002 ~ 1 5 m V (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

GMC-X9042 Package controller uses 24V DC power supply. The connection is shown below:

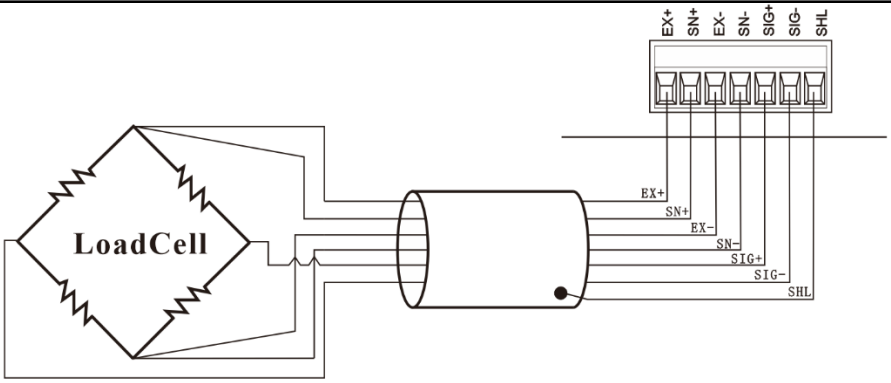


Power terminal diagram:
24V+ connects to DC positive, 24V- connects to DC negative.
Note: This product uses DC 24V power supply, using AC 220V power supply will permanently damage the instrument,and danger!!

2.2 Connection of the sensor

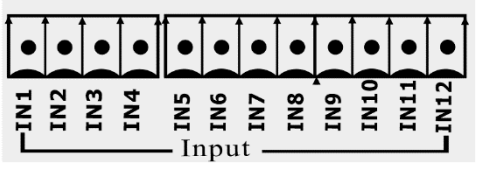
The GMC-X9042 package controller can be connected to a resistance strain bridge sensor. When a four-wire sensor is selected, the SN+ of the sensor must be short-circuited with the EX+, and the SN- must be short-circuited with the EX-.

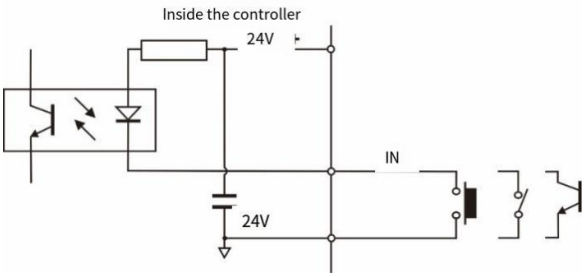
port	EX+	SN+	EX-	SN-	SIG+	SIG-	SHL
Six-wire	Power positive	Sensing positive	Power negative	Sensing negative	Signal positive	Signal negative	Shielded wire
Four-wire	Power positive		Power negative		Signal positive	Signal negative	Shielded wire



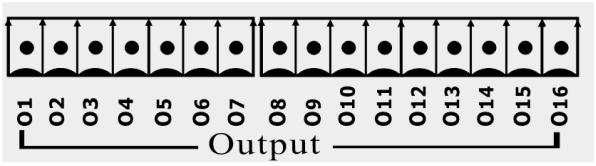
2.3 Connection of the IO interface

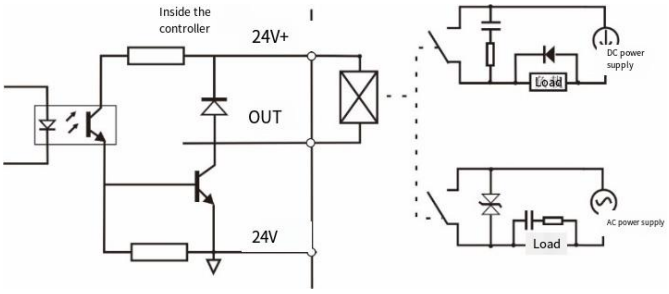
The GMC-X9042 package controller contains 28 IO input and output control (12 in /16 out). Adopt photoelectric isolation mode, the instrument internal power drive. The IO input of the instrument is effective at low level; The output adopts transistor open-collector output mode, each drive current up to 200mA, full load current up to 3A. The terminal connection is shown in the following figure:





IO input interface diagram



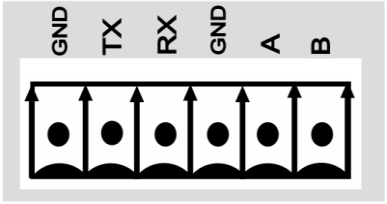


IO output interface diagram

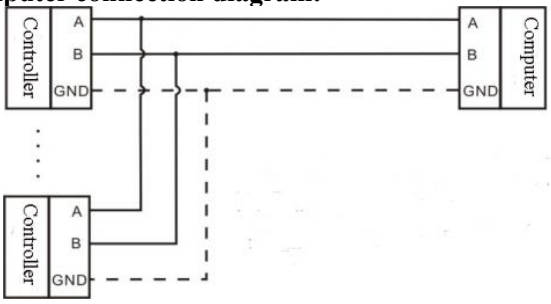
GMC-X9042 packing controller IO for the user can be customized, in order to facilitate the user wiring and some special applications, IO content refer to Chapter 3.7.

2.4 Serial port connection

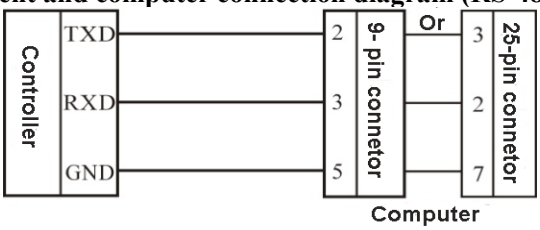
GMC-X9042 can provide two serial communication interfaces, the interface is shown in the following figure. RS-232 mode (terminal TX, RX, GND) and RS-485 (terminal A, B, GND). Serial port support: MODBUS protocol, continuous mode and print format, ReCont, Modbus_8802S -p protocol etc.



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 of serial port

If the serial port can't communicate, 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, baudrate, data format and communication protocol must be consistent with the host computer and PLC.

2.5 Network Port Connection

The product supports cSingle/dual port communication, supports Modbus-TCP network protocol. Dual network port option, network port built-in switch, easy to cascade. The communication parameters b2.11~b2.16 under the working parameters of the network port can also be set through the Modbus address area 1610~1615 (4x1611~4x1616). 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 Parameters (CAL)

Set the weight parameters and calibrate the instrument. Calibration is instrument calibration, the first use of GMC-X9042 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 calibrated the controller, calibration parameters directly affect the instrument weighing results.

Calibration parameters MODBUS address range is 0100~0121 (4x0101~4x0122), see the MODBUS address assignment table in the chapter 5.3.3 for details.

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 division×100000 can be set
SE out	Millivolt output	Read out the millivolt of the sensor currently displayed
Zero	Zero calibration	Empty the scale, display zero millivolt, press ENTER this button for zero calibration.
Load1	Weight calibration	Load the weight, display the relative millivolt after loading, press ENTER jump to"LOAD2", and calibrate with the current relative millivolt gain.
Load2	Weight calibration	Displays the gain weight entered at the last gain calibration. At this time, you can input the weight value of the loaded weight in Load1, press ENTER button to confirm, prompt "SUCC", then complete the calibration process.

3.2 Recipe Parameters (Recipe)

Used to set the relevant parameters of the packaging weight value, including weighing parameters, weighing time parameters, over and under parameters, drop correction parameters, adaptive parameters, littlely slow feed parameters and the corresponding setting parameters of different scale modes.

No.	Parameters	Initial values	Instructions
F1	**U_LSet**	**Set the weighing parameter values**	
F1.1	Target values	**0.00**	Fixed weight target value.
F1.2	Co-Fi remain	**0.00**	During the weighing process, if the weighing value is ≥ the target value - Co-Fi remain, then turn off the Fast feeding. Range: 0~ full scale.
F1.3	Me-Fi remain	**0.00**	In the weighing process, if the weighing value is ≥ the target value - Me-Fi remain, then turn off the Middle feeding. Range: 0~ full scale.
F1.4	Free Fall	**0.00**	In the weighing process, if the weighing value is ≥ the target value - free fall, then turned off slow feeding.

			Range: 0~ full scale.
F1.5	Zone Zero	**0.00**	In the weighing process, if the weighing value is less than the zero zone value, the discharging delay timer is started. Range: 0~ full scale.
F2	**T1_Set**	**Set the weighing time parameter value**	
F2.1	Delay before feeding	**0.5**	In the hopper mode, at the beginning of the weighing process, after this delay time, the instrument is stable and zero(if it does not meet the conditions of the zero interval, it is not judged stable and not allow to zero), and then the feeding process begins; In no hopper mode, after clamping bag is completed, after this delay time, the instrument will perform tare operation. Range: 0.0~99.9. (Unit :s)
F2.2	COMP.In-hibit.Time(Co-F)	**0.9**	At the beginning of the weighing, during this time, in order to avoid overshooting without weight judgment, Fast feeding is effective. Range: 0.0 to 99.9. (Unit :s)
F2.3	COMP.In-hibit.Time(Me-F)	**0.9**	After the end of the fast feeding, during this time, in order to avoid overshooting without weight judgment, the middle feeding is effective. Range: 0.0~99.9. (Unit :s)
F2.4	COMP.In-hibit.Time(Fi-F)	**0.9**	After the end of feeding, during this time, in order to avoid overshooting,no weight judgment performed, slow feeding is effective. Range: 0.0~99.9. (Unit :s)
F2.5	Waiting hold time	**0.5**	When the mode is selected as "delay waiting", after the slow feeding is closed (or the over/under switch is opened, the over/under-error alarm is over), the setting is started. After this waiting time, the setting is consid-ered to be over and the next process is entered. Range: 0.0~99.9. (Unit :s)
F2.6	Delay after clamp-ing/loosing 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)
F2.7	Delay before bag release	**0.5**	After the discharge of hopper mode, the output loose bag signal through this delay time; No hopper mode setting after the waiting(patting bag) is completed, through this delay output signal of loos-ing bag . Range: 0.0~99.9. (Unit :s)
F2.8	Discharging time	**0.5**	In the discharging process, when the weight value of the hopper is less than the zero zone value, start this delay, and turn off the discharging signal at the end of the delay. Range: 0.0~99.9. (Unit :s) (Note: This parameter is only valid for hopper mode)
F2.9	Delay start	**4.0**	No hopper interlock mode is effective, A scale in the

	time for bag clamping again		front of the conveyor,B scale in the rear end of the conveyor, and the double scale bag loosening mode is not loosening the bag simultaneously. If the bag is loosened after the B scale is fed, the A scale has not loosened the bag, at this time, the B scale clamps A bag again, and wait for the A scale to complete the loosening of the bag, and after the conveyor is started, the delay time after the B scale begins to feed. Range: 0.0 ~ 99.9. (Unit s) (Note: This parameter is only valid if the bag is loosened at different times.)
F3	/	**OFF**	Used to set the parameters related to the overshoot and undershoot alarm reminder, this item is consistent with F3.1 display.
F3.1	Over and under detection switch	**OFF**	"ON/OFF" is optional. When this parameter is set to "ON", the weighing process will perform overshoot and undershoot judgment, and the F3.2 to F3.9 parameters will be visible.
F3.2	Over and under pause switch	**OFF**	"ON/OFF" is optional. When it is set to "ON", the instrument will pause and wait for the user to handle when the weighing process over or under. IO input emergency stop, return to the stop state, and clear the alarm; Or IO input clear alarm, clear alarm and continue the weighing process.
F3.3	Over and under error alarm time	**1.0**	When the alarm is not manually cleared, after the alarm time is set, the alarm will be closed by itself. Range: 0.0 ~ 99.9. (Unit s)
F3.4	Over	**0.00**	In the weighing process, if the weighing value ≥ the target value + the over limit value, it is judged as the over. Initial value: 0.
F3.5	Under	**0.00**	In the weighing process, if the weighing value is less than the target value - under value, it is judged as under. Initial value: 0.
F3.6	Under supply material switch	**OFF**	Set the under feed judge switch. ON: When the under 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 under occurs.
F3.7	Under supply numbers	**1**	When the weighing process is judged to be under, the feed is slowly added according to this value. Range 1 to 99.
F3.8	Under supply effective time	**0.5**	When feeding output, within a on-off cycle, slow feeding the effective time. Range: 0.0 ~ 99.9 (unit s).
F3.9	Under supply ineffective time	**0.5**	When feeding output, within a on-off cycle, the effective time of slow feeding. Range: 0.0 ~ 99.9 (unit s).

This selection of different scale structure, view and set the following corresponding parameters.(When there is no bucket scale for binno, no parameters can be set)			
F4	**binyes**	When the MODE parameter b3.1 under SETUP is set to binyes, the parameters F4.1~F4.3 can be displayed and be set.	
F4.1	Single scale combination times	**1**	When there is a hopper scale structure, loosen the bag once after discharging several times. If it is 0, the instrument directly discharges the material without judging whether the bag is effective after the feeding is completed. Range: 0 to 99.
F4.2	Multi-scale switch with hopper	**OFF**	ON/OFF "is optional. When set to" ON ", the instrument works in multi-scale mode with hopper.
F4.3	Total Target value	**0.00**	Total target value (the total target value takes effect after the multi-scale switch is turned on). Range: 0 ~ 999999.
F4.4 ~ F4.20	If the F4.1 multi-scale switch is set to ON, the displayed parameters F4.4~F4.20 correspond to F4.1~F4.17 of the ton bag sacle parameters.		
F4	**ton**	When the MODE parameter b3.1 under SETUP is ton bag scale, the ton bag scale display parameters F4.1~F4.17 can be set.	
F4.1	Lift Bag delay time	**0.5**	Bag delay time until the bag action is considered completed. Range: 0.0 ~ 99.9. (Unit: s)
F4.2	Bracket automatic lift switch	**0**	Optional :0- automatic rise, automatic fall; 1- automatic rise, manual fall; 2- Manual rise, automatic fall; 3- Manual rise, manual fall. Default: 0- Automatic rise, automatic fall
F4.3	Bracket up delay time	**0.0**	Execute this delay after the rise signal is issued. Range: 0.0 to 99.9. (Unit s) Note: Only valid when the b4.1 bracket motion mode of the ton bag scale paramete is " Pneumatic-Unlimited limit " mode.
F4.4	Bracket down delay time	**0.0**	Start this delay after the end of the weighing delay. Range: 0.0 to 99.9. (Unit s) Note: Valid only in b4.1 bracket motion mode "Pneumatic - Unlimited limit" mode.
F4.5	Bracket up timeout	**5.0**	When the measuring bracket descends, the downward output of the measuring bracket is valid, but the upward output of the measuring bracket is invalid. Wait for the bracket to descend into place. If the bracket still does not descend into place within the timeout period of the bracket descent, the bracket descent timeout alarm will be triggered.Range: 0.0 to 99.9. (Unit s) Note: The b4.1 bracket movement mode is "electric -/pneumatic - double limit" mode.
F4.6	Bracket	**5.0**	When the measuring bracket descends, the downward

	down timeout		output of the measuring bracket is valid, but the upward output of the measuring bracket is invalid. Wait for the bracket to descend into place. If the bracket still does not descend into place within the timeout period of the bracket descent, the bracket descent timeout alarm will be triggered.Range: 0.0 to 99.9. (Unit s) Note: The b4.1 bracket movement mode is "electric - double limit/pneumatic - double limit" mode.
F4.7	Lifting bag reset time	**0.0**	When the parameter is set to non-0, after the feeding is completed, the lifting bag output is invalid after the duration of this time, output continue to be valid. Range: 0.0 ~ 99.9. (Unit s) Note: ①The reset time of the hanging bag must be greater than the delay time of the hanging bag for the reset to be effective.②The first scale of the instrument needs to be manually given a lifting bag signal. ③When the parameter is set to 0, the instrument needs a lifting bag signal every time before starting to feed.
F4.8	Blowing method	**0**	0-Blow before uplink delay: When the air blowing output is effective, the measuring bracket uplink output is effective. 1- Blow after uplink delay: blowing after the measuring bracket output continues to support uplink delay time.
F4.9	Blowing time	**0.5**	Blower blow output time. Range: 0.0 to 99.9. (Unit s)
F4.10	Return valve method	**0**	0- Closed after feeding: After closing the slow feed, the return valve output is invalid. 1- Closed after loosening bag: After loosening bag is completed, the return valve output is invalid.
F4.11	Second up switch	**OFF**	ON: The decoupling uplink switch is on. OFF: The decoupling uplink switch is off. Initial value: Off. (Note: When it is on, the following parameters are available)
F4.12	Delay before second go up	**0.0**	When unhook uplink switch is turned on, unhook, need to delay the time, then bracket uplink. Range: 0.0 ~ 99.9. (Unit s)
F4.13	Second up time	**0.0**	The uplink switch is on, and after the uplink is performed by the decoupling, the uplink bracket output needs to last for that time. Range: 0.0 to 99.9. (Unit s)
F4.14	Second up pause time	**0.0**	Disconnect uplink switch on, disconnect execution after the end of the uplink, need to wait for the time before downlink. The value ranges from 0.0 to 99.9. (Unit s)
F4.15	Decoupling incomplete alarm switch	**OFF**	ON: The decoupling incomplete alarm switch is on. OFF: The disengaging incomplete alarm switch is off.

F4.16	Decoupling alarm conveyor reversal time	**0.1**	Unhook incomplete alarm switch opens, when the unhook incomplete alarm, the conveyor immediately performs reversal, lasting that time. Range: 0.0 ~ 99.9. (Unit s) (Set to 0, indicating that the conveyor does not reverse)
F4.17	Decoupling alarm weight value	**0.00**	Unhook incomplete alarm switch opens, if unhook up this time, the current weight value is greater than the unhook alarm weight value, the instrument output unhook alarm signal. Initial value: 0, range: 0 ~ full scale.
F4	**Valve**	When the b3 MODE parameter b3.1 under SETUP is valve scale structure, you can set the valve port scale display parameters F4.1~F4.4.	
F4.1	Delay before bag lifting	**0.5**	The delay time before bag lifting is started at the same time.Range: 0.0 ~ 99.9. (Unit s)
F4.2	Bag Lifting effective time	**0.5**	Start the time after the end of the delay time before the bag lifting, and the output of the bag lifting signal is effective, and the output of the bag lifting signal is invalid after the end of the time.Range: 0.0 ~ 99.9. (Unit s)
F4.3	Delay before push bag	**0.5**	When the loose bag start delay is started, the delay time before pushing the bag is also started. Range: 0.0 ~ 99.9. (Unit s)
F4.4	Effective time of pushing bag	**0.5**	Start the time after the end of the delay time before the bag push, and the output of the bag push signal is effective, and the output of the bag push signal is invalid after the end of the time.Range: 0.0 ~ 99.9. (Unit s)
F4	**PLC**	When the b3MODE parameter b3.1 under the SETUP scale structure is PLC, the valve scale display parameters F4.1~F4.4 can be set.	
F4.1	Over value	**0.00**	Over output is valid when weigh value > target value + over value.Range: 0.00~ maximum range.
F4.2	Under value	**0.00**	Under output is valid when weigh value < target value - under value.Range: 0.00~ maximum range.
F4.3	Upper limit value	**0.00**	Upper limit output is valid when weigh value > upper limit value. Range: 0.00~ maximum range.
F4.4	Lower limit value	**0.00**	Lower limit output is valid when weigh value < lower limit value. Range: 0.00~ maximum range.
F5	**/**	**OFF**	This parameter is used to set the parameters related to automatic drop adjustment. The values are the same as those displayed in F5.1.
F5.1	Drop correction switch	**OFF**	The drop value is the weight value that does not fall into the measuring hopper after turning off the slow feeding signal. The drop correction is performed as required based on the actual drop value."ON/OFF" is optional. When this parameter is set to "ON", the drop correction will be carried out in the weighing process,

			and the F5.2~F5.4 parameters will be visible. (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.)
F5.2	Corrected sampling number	**1**	The average value obtained by averaging the set number of drop values. as the basis for the correction of the drop. Range: 1 ~ 99.
F5.3	Drop 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)
F5.4	Drop correction amplitude	**1-50%**	The amount of each drop correction; Three ranges of 0-100%, 1-50%, 2-25% are optional.
F6	/	**OFF**	Used to set the parameters related to manual slow feeding, this item is shown as F6.1.
F6.1	Littlely slow-feeding switch	**OFF**	"ON/OFF" is optional. If this parameter is set to "ON", the instrument will be charged in the form of slow and click. F6.2~F6.3 parameter is visible.
F6.2	Littlely slow-feeding valid time	**0.5**	When the littlely slow-feeding outputs, the effective time is fed slowly within an on-off cycle. Range: 0.0 ~ 9.9. (Unit s)
F6.3	Littlely slow-feeding invalid time	**0.5**	When the dynamic output is slowly feeding, the invalid time is fed slowly within a on-off cycle. Range: 0.0 ~ 9.9. (Unit s)
F7	/	**OFF**	Used to set adaptive related parameters, this item is shown as F7.1.
F7.1	Adaptive switch	**OFF**	Adaptive function, after turn on the switch, automatically adjust the Co-Fi remain, Me-Fi remain and free fall of the instrument and the forbidden time during operation. Optional OFF,Two(double speed), Three(three speed). If it is set to Two or Three, the F7.2~F7.3 parameter is visible. (Note: Drop correction and adaptive function cannot be enabled at the same time, if the adaptive function is enabled, the drop correction function must be turned off.① ②When the first scale adaptive start, must ensure that the scale is stable and the current weight is zero.
F7.2	Adaptive level	**3**	The lower the level, the faster the feeding speed and the relatively lower the accuracy.Range: 1 to 5.
F7.3	Adaptive update switch	**OFF**	ON, the change value of the fast, medium and slow lead will be updated to the weighing parameter value; When OFF, the weighing parameter value cannot be updated.

F8	/	**OFF**	Used to set the parameters related to fast mode, this item is shown as F8.1.
F8.1	Quick feed mode switch	**OFF**	"ON/OFF" is optional. If it is set to "ON", the instrument will enable the fast mode function, and the F8.2 to F8.5 parameters will be visible.
F8.2	Fast Mode time	**50**	Fast mode cutoff time. Range: 0 to 999. (in ms)
F8.3	Fast Mode Weight	**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 the number of times. Range: 0 to 9
F8.5	Fast Mode Stabilization time	**100**	Steady time of the instrument after the fast mode function is turned on. Range: 0 to 999. (in ms)

3.3 Working Parameters (Setup)

3.3.1 Basic Parameters

No.	Parameter number	Initial value	Instructions
b1	base	Set basic weighing related parameters, such as zero range, such as zero range, judging stability, etc.	
b1.1	Zero range	**50**	Zero range. Range: 1 to 99 (percentage of full scale).
b 1.2	Stable range	**2**	During the stabilization time, the weight change range within this setting value is judged to be stable. Range: 0 ~ 99(d).
b1.3	Stable time	**0.3**	Range: 0.1 to 9.9. (Unit s)
b1.4	Zero tracking range	**0**	Weight value within this range, the instrument automatically displays zero. Zero tracking is not performed when it is 0. The value ranges from 0 to 9(d).
b1.5	Zero tracking time	**2.0**	Range: 0.1 to 99.9 (unit s)
b1.6	Automatic zero after power-on	**OFF**	ON/OFF is optional. If this parameter is set to ON, the instrument will automatically zero after it is powered on (the weight in the scale hopper meets the zero range).
b1.7	A/D sampling rate	**240**	A/D sampling rate:120times/sec,240 times/sec, 480 times/sec optional.
b1.8	Stop filter level	**7**	Filtering intensity classification in the stopped state. Range 0 to 9.
b1.9	/	**ON**	Used to set filtering parameters, press ENTER to enter b1.9.1, this item is the same as b1.9.1 display.
b1.9.1	Dynamic filter switch	**ON**	During the packaging process, whether to perform filter operation.

			(Set "ON", the following parameters can be set)
b1.9.2	Feed filter rating	**4**	Filtering parameters in the feeding process: 9: the strongest filtering effect.Range: 0 ~ 9.
b1.9.3	Waiting filtering level	**7**	Filtering parameters in the setting process: 9: the strongest filtering effect.Range: 0 ~ 9.
b1.9.4	Discharge filter level	**1**	Filtering parameters in the discharging process: 9: the strongest filtering effect.Range: 0 ~ 9.
b1.10	Secondary filter switch	**OFF**	ON/OFF Optional, perform secondary filtering based on digital filtering.
b1.11	Run stable timeout	**0.0**	Range: 0.0 to 99.9. (Unit s)

3.3.2 Communication parameters

No.	Parameter	Initial value	Instructions
b2	UART	Set the relevant communication parameters, including baud rate, communication protocol data format, etc., and print parameters.	
b2.1	Slave ID(485)	**1**	1 to 99 Optional.
b2.2	Protocol (485)	**Mb-rtu**	Mb-rtu (Modbus-RTU) / Print / Cont continuous mode/ Md-SP（Modbus_8802S-P）/Re-Cont Optional.
b2.3	Baud rate (485)	**38400**	9600/19200/38400/57600/115200 is optional.
b2.4	Data format (485)	**8-E-1**	Data bit - Parity check - stop bit; 8-E-1/8-N-1/7-E-1/7-N-1 Optional. (Note: Only 8-bit data can be selected in the Mobdus protocol)
b2.5	High-low word (485)	**Hi-Lo**	The Modbus communication display mode Hi-Lo (high word in front)/Lo-Hi(low word in front) is optional.
b2.6	Slave number (232)	**1**	1 to 99 Optional.
b2.7	Protocol (232)	**Mb-rtu**	Mb-rtu (Modbus-RTU) /Print /Cont continuous mode / Md-SP（Modbus_8802S-P）/Re-Cont Optional.
b2.8	Baud rate (232)	**38400**	9600/19200/38400/57600/115200 is optional.
b2.9	Data Format (232)	**8-E-1**	Data bit - Parity check - stop bit; 8-E-1/8-N-1/7-E-1/7-N-1 Optional. (Note: Only 8-bit data can be selected in the Mobdus protocol)
b2.10	High-low word (232)	**Hi-Lo**	The Modbus communication display mode Hi-Lo (high word in front)/Lo-Hi(low word in front) is optional.
b2.11	High-low word (TCP parameter)	**Hi-Lo**	The Modbus communication display mode Hi-Lo (high word in front)/Lo-

			Hi(low word in front) is optional.
b2.12	Port	**502**	Range: **1~65535**.
b2.13	IP address	**192**	Range: **0~255**
b2.14		**168**	Range: **0~255**
b2.15		**101**	Range: **0~255**
b2.16		**246**	Range: **0~255**
b2.17	Print switch	**OFF**	"ON/OFF" is optional. If this parameter is set to "ON", the packaging result will be automatically printed each time the packaging is completed (serial communication mode "Print" is required).
b2.18	Print format	**24C**	24C(24 column print)/ 32C(32 column print).
b2.19	Print language	**CN**	CN(print in Chinese)/ENG (print in English) Optional
b2.20	The lines of paper feeding	**3**	The number of paper lines after printing is completed, 0 to 9 optional

3.3.3 Mode parameters

No.	Parameter	Initial value	Instructions
b3	Mode	Different scale structure and working mode can be set	
b3.1	Scale structure	**binyes**	binyes (with hopper scale)/ bin no (without hopper scale)/ ton(jumbo) bag scale/valve(valve port scale)/PLC optional. Set the corresponding parameters according to the different scale structure.
b3.2	Working mode	**0**	Optional 0- Single scale /1- Interlock A scale /2- Interlock B scale. (Note: This parameter is valid when the scale body structure is binyes or bin no scale.)
b3.3	Feeding control method	**1**	0- individual feeding:Large feeding port for feeding during fast feeding; Middle feeding port for feeding during fast feeding.Large feeding port for feeding during fast feeding 1- Combined feeding: fast feeding、medium and small feeding ports at the same time for fast feeding; medium and small feeding port at the same time when medium feeding; Small feeding port for slow addition.
b3.4	Packing Mode	**1**	0- Gross weight packaging /1- Net weight packaging optional.

3.3.4 Scale parameters

No.	Parameter	Initial value	Instructions

b4	Switch	According to the scale structure of b3.1, show the following parameters corresponding to the hopper scale/hopper scale/jumbo Net Weigher scale	
With hopper scale parameters			
b4.1	Manual loose bag switch	**OFF**	"ON/OFF" optional, this parameter is set to "ON", running, you need to manually control the loose bag.
b4.2	Auto 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 not zeroed. Range: 0 ~ 99.
b4.3	Waiting weight hold switch	**OFF**	ON/OFF is optional. Set to "ON", the weight display remains unchanged after the set time is over, and the weight changes again after Discharging is completed and the weight returns to the zero zone.
b4.4	Manual discharge accumulator switch	**OFF**	ON/OFF optional; Set to "ON" and the manual discharging weight value is added to the cumulative value.
b4.5	Feeding method	**0**	**0-Sin- separate feeding**: fast time large feeding port feed; Feed in the feeding port when adding; Slow time small feeding port feed. **1-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.
b4.6 ~b4.8	If the F4.1 multi-scale switch is set to ON, the displayed parameters b4.6~b4.8 correspond to b4.1~b4.3 of the jumbo bag parameters.		
No hopper scale parameters			
b4.1	Loose bag allowed feeding switch	**OFF**	ON/OFF optional; Set to "ON", no hopper scale mode, after starting, allow loose bags in the feed. Set to "Off", after starting, loose bag is not allowed in the feed.
b4.2	Manual bag release switch	**OFF**	ON/OFF optional; Set to "ON", running, need to manually control the loose bag.
b4.3	Hopper control switch	**OFF**	ON/OFF optional; Set to "ON", in operation, you need to manually control the way the bracket moves.
b4.4	Double scale loose bag mode	**OFF**	**OFF**-not loose bag simultaneously **ON1**-loose bag 1 simultaneously **ON2**-loose bag 2 simultaneously Optional. not loose bag simultaneously: the bag is loosened after the completion of packaging, and after all the bags are loosened by the A/B scale, the instrument controls the conveyor signal output and starts the conveyor.

			loosening bag 1 simultaneously: for the ordinary mode, 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. If a scale has been completed feeding, the other scale is not in the clamp bag (feeding) state, then do not wait for another scale, the scale directly loose the bag. loosening bag 2 simultaneously: for the fast mode, By default, scale A comes first and scale B comes after. After the A scale has finished adding materials, it will not judge whether the B scale is complete and will directly loosen the bag. After B's feeding is completed, it must be judged whether A is in the bag clamping (feeding) state; if A is feeding, B must wait for A to finish adding and loosen the bag at the same time; if A is not feeding, B does not need to wait to loosen the bag directly. (Note: The working mode is interlock A scale and interlock B scale, the parameters are visible.)
b4.5	Feeding method	**0**	**0-Sin- separate feeding**: fast time large feeding port feed; Feed in the feeding port when adding; Slow time small feeding port feed. **1-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.
Ton bag scale parameters			
b4.1	Bracket operation mode	**0**	Optional： 0- Pneumatic-Unlimited limit 1- Electric - Double limit 2- Pneumatic - Double limit.
b4.2	Lifting bag run control switch	**OFF**	ON/OFF optional; Set to "ON", jumbo bag scale mode, after starting, allow lifting bag, do not allow removing lifting bag.
b4.3	Lifting Bag anti-logic switch	**OFF**	ON/OFF optional; Set to "ON", in jumbo bag scale mode, the IO output is invalid when the lifting bag output is effective, and the IO output is effective when the lifting bag output is invalid.
b4.4	Tare detection switch	**OFF**	ON/OFF optional; Set to "ON", in the jumbo pack scale mode, the instrument will return to the stop state without adding material to a certain value during operation, and when it starts again, it does not need to tare and directly start feeding. Note: This function only records the tare value when the current weight is greater than 0 and it

			is started again.
b4.5	Feeding method	**0**	**0-Sin- separate feeding**: fast time large feeding port feed; Feed in the feeding port when adding; Slow time small feeding port feed. **1-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.
Valve scale parameters			
b4.1	Manual release bag switch	**OFF**	ON/OFF optional; Set to "ON", running, need to manually control the loose bag.
b4.2	Feeding method	**0**	**0-Sin- separate feeding**: fast time large feeding port feed; Feed in the feeding port when adding; Slow time small feeding port feed. **1-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.

3.4 Peripheral Parameters (Perip)

The instrument is equipped with peripheral control functions such as patting bag, sewing bag, discharging vibration, conveyor, coding, etc. The MODBUS address range of peripheral parameters is 1000~1083 (4x1001~4x1084), see the chapter 5.3.3 the MODBUS address assignment table.

3.4.1 patting bag parameters

No.	Parameters	Initial values	Instructions
P1	Poff	Displays the current patting bag mode, which is the same as shown in P1.1.(Note: The patting bag parameters can only be set when the body structure of b3.1 is binyes scale/bin no scale/ton bag scale/valve scale)	
P1.1	Patting bag mode	**0**	Bag mode selection: 0-PoFF(no patting bag)/ 1-P-d (patting bag after waiting)/ 2-PF - (patting bag in feeding)/ 3-PFd (patting bag after waiting or in feeding); Note: ①With hopper mode, only 0-PoFF (no patting bag) / 1-P-d (patting bag after waiting) is optional; But when the multi-scale switch with hopper of F4.2 under the recipe parameters is ON, PF - and PFd can also be selected;②PLC mode is not optional.
P1.2	Delay before patting bag	**0.5**	After the patting bag is started, the patting bag output is effective after this delay time. Range: 0.0~99.9. (Unit s)
P1.3	Patting bag effective time	**0.5**	Patting bag within a on-off cycle, valid time of patting bag output . Range: 0.0~99.9. (Unit s)
P1.4	Patting bag ineffective time	**0.5**	Patting bag within a on-off cycle, invalid time of patting bag output . Range: 0.0~99.9. (Unit s)

P1.5	the number of patting bag after waiting	**4**	Set the parameter, the number of patting bag after waiting. Range: 0~99. (Note: the patting bag mode is the patting bag after waiting, and the parameters of the patting bag after waiting or in the feeding are visible)
P1.6	Extra patting bag effective time	**0.0**	Generally used in pier bag function. (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) After the end of all the bags, add an additional patting bag output, the effective time is the set time of the value, and the invalid time is the "patting bag invalid time". 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 patting bag output, that is, start the additional patting 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).
P1.7	Patting bag starting weight 1	**0**	No hopper, jumbo 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 1, to start the bag. Range: 0~ maximum measuring range.
P1.8	Number 1 of patting bags during feeding	**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 pat when feeding after entering the slow-feeding).The starting weight 1 of patting bag corresponds to the number of times the bag is patted. Range: 0 to 99.
P1.9	Patting bag starting weight 2	**0**	The current weight must be greater than or equal to the bag starting weight 2 to start patting bag. Range: 0~ maximum range.
P1.10	Number 2 of bags patting during feeding	**0**	Patting bag starting weight 2,The corresponding number of bat bags. Range: 0 to 99.
P1.11	Patting bag starting weight 3	**0**	The current weight must be greater than or equal to the bag starting weight 3 to start the bag. Range: 0~ maximum range.
P1.12	Number 3 of bags patting during feeding	**0**	Bag starting weight 3 Corresponding bag count. Range: 0 to 99.

3.4.2 Parameters of the sewing machine

No.	Parameters	Initial values	Instructions
P2	OFF	Used to set parameters related to the sewing machine. This item is consistent with P2.1.	
P2.1	Sewing machine switch	**ON**	ON/OFF optional; Set to "ON" to turn on the sewing function.
P2.2	Delay before starting the sewing machine	**0.5**	After the sewing machine start switch is effective, start the sewing machine delay time. Range: 0.0~99.9. (Unit s)
P2.3	Sewing machine output effective time	**4.0**	After the delay time arrives, start the output of the sewing machine and stop output after the output time of the sewing machine. Range: 0.0~99.9. (Unit s)
P2.4	Delay before stopping the sewing machine	**0.5**	When the output effective time of the sewing machine reaches, this time is executed. When the time reaches, the sewing machine stops working. Initial value: 0.5. Range: 0.0 to 99.9. (Unit s)
P2.5	Sewing machine debounce time	**0.3**	Prevent the photoelectric jitter when starting the bag sewing machine from causing the bag sewing machine to work abnormally. During the debounce time,the photoelectricity of the bag sewing machine is shaking, but the output of the bag sewing machine is still valid at this time. Range: 0.0~99.9. (Unit s)
P2.6	Cutter start time	**0.5**	After the end of the effective time of the output 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)
P2.7	Cutter output effective time	**0.5**	After the start of the cutter, start the output of the cutter, and continue the effective time of the output of the cutter. Range: 0.0~99.9. (Unit s)

3.4.3 Discharge vibration parameters

No.	Parameters	Initial value	Instructions
P3	/	OFF	Used to set discharge vibration related parameters, this item is consistent with P3.1 display.
P3.1	Discharge vibration switch	**OFF**	ON/OFF optional; Set to "ON" to turn on the discharge vibration function.
P3.2	Discharge effective time	**2.0**	When the waiting holding time is arrived, the period from the output of the discharge signal to the completion of discharge and the start of the discharge delay is the discharge effective time. If the discharging time exceeds this time, it will be considered abnormal and the discharging and vibration action will be started. Range 0.0 to 9.9. (Unit s)

P3.3	Effective time of discharge vibration	**0.5**	Range 0.0 to 9.9. (unit s).
P3.4	Discharging vibration ineffective time	**0.5**	Range 0.0 to 9.9. (Unit s)
P3.5	Discharging vibration times	**10**	Range 0 to 99.

3.4.4 Conveyor parameters

No.	Parameters	Initial values	Instructions
P4	/	OFF	Used to set conveyor configuration related parameters, this item is shown in accordance with P4.1.
P4.1	Conveyor Mode	**OFF**	Optional: Turn on the conveyor output function when OFF, on1(Stage 1 conveyor)/ on2(Stage 2 conveyor)/ on3(Stage 3 conveyor).
P4.2	Conveyor 1 Start delay	**0.5**	After this delay after loosening the bag, the instrument judges that the conveyor is started. Range: 0~99.9. (Unit s)
P4.3	Conveyor 1 Run time	**4.0**	Conveyor run time Settings. Range: 0~99.9. (Unit s)
P4.4	Conveyor 2/3 maximum running time	**30.0**	Conveyor 2/3 run time setting. Range: 0 to 99.9. (Unit s) (Note: in the jumbo scale mode, the parameters of the 2 or 3 conveyor are visible only when opened)

3.4.5 Coding parameters

No.	Parameters	Initial values	Instructions
P5	/	**OFF**	It is used to set parameters related to coding. This parameter is consistent with that displayed in P5.1.
P5.1	Code switch	**OFF**	The peripheral switch is set to "ON" and the instrument has the function of coding output.
P5.2	Code start delay	**0.5**	Bag clamping completed, after this delay coding output is valid. Range: 0.0~99.9. (Unit s)
P5.3	Code valid time	**0.5**	Code effective time. Range: 0.0 to 99.9. (Unit s)
P5.4	Filling/discharge switch are not allowed when coding	**0**	1-ON/0-OFF optional; Set to "ON" to enable the feed output(no hopper mode) or discharge output(hopper mode) during coding.

3.4.6 Auxiliary pulse parameters

No.	Parameters	Initial values	Instructions
P6	/	**OFF**	Used to set auxiliary pulse related parameters, this item is consistent with P6.1 display.
P6.1	Auxiliary pulse switch	**OFF**	ON/OFF optional; Set it to "ON" to turn on the auxiliary pulse function.
P6.2	Auxiliary pulse Mode 1	**0**	The mode of auxiliary pulse 1 to 4 can be selected according to the need 0: pulse mode; 1: level mode.
P6.3	Auxiliary Pulse Mode 2	**0**	The mode of auxiliary pulse 1 to 4 can be selected according to the need 0: pulse mode; 1: level mode.
P6.4	Auxiliary pulse Mode 3	**0**	The mode of auxiliary pulse 1 to 4 can be selected according to the need 0: pulse mode; 1: level mode.
P6.5	Auxiliary pulse Mode 4	**0**	The mode of auxiliary pulse 1 to 4 can be selected according to the need 0: pulse mode; 1: level mode.
P6.6	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)
P6.7	Auxiliary pulse 1 effective time	**10.0**	Range :0.0 to 999.9. (Unit s)
P6.8	Auxiliary Pulse 1 Ineffective time	**10.0**	Range :0.0 to 999.9. (Unit s)
P6.9	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)
P6.10	Auxiliary pulse 2 Effective time	**10.0**	Range :0.0 to 999.9. (Unit s)
P6.11	Auxiliary pulse 2 Ineffective time	**10.0**	Range :0.0 to 999.9. (Unit s)
P6.12	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)
P6.13	Auxiliary pulse 3 Effective time	**10.0**	Range :0.0 to 999.9. (Unit min)
P6.14	Auxiliary pulse 3 Ineffective time	**10.0**	Range :0.0 to 999.9. (Unit min)
P6.15	Auxiliary	**0**	Auxiliary pulse 4 Perform total time. If it is 0, execute all the time. Range :0.0 to 999.9. (Unit

	pulse 4 Perform total time		min)
P6.16	Auxiliary pulse 4 Effective time	**10.0**	Range :0.0 to 999.9. (Unit min)
P6.17	Auxiliary pulse 4 Ineffective time	**10.0**	Range :0.0 to 999.9. (Unit min)

3.4.7 Timeout alarm parameters

No.	Parameters	Initial values	Instructions
P7	/	**OFF**	Used to set timeout alarm reminder related parameters, this item is consistent with P7.1 display.
P7.1	Feed/discharge timeout switch	**OFF**	The peripheral switch is set to "ON" to enable the feeding and discharging timeout judgment function. After it is turned on, the feeding and discharging timeout judgment is carried out in the running state.
P7.2	Fast-feeding timeout	**5.0**	In the running state, after the fast-feeding output exceeds the time, the output timeout alarm and stop. Initial value :5.0; Range 0.0 to 99.9. (Unit s)
P7.3	Middle-feeding timeout	**5.0**	In the running state, when the output exceeds this time, the output timeout alarm is generated and the machine is shut down. Initial value :5.0; Range 0.0 to 99.9. (Unit s)
P7.4	Slow-feeding timeout	**5.0**	In the running state, when the output exceeds this time, the output timeout alarm will be generated and the machine will stop. Initial value :5.0; Range :0.0 to 99.9. (Unit s)
P7.5	Discharging timeout	**5.0**	In the running state, when the discharging output exceeds the time, the output timeout alarm and stop. Initial value :5.0; Range :0.0 to 99.9. (Unit s)

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 peripheral parameters is 1400~1530 (4x1401~4x1531), see the chapter 5.3.3 the MODBUS address assignment table.

3.5.1 Feeding motor parameters

No.	Parameters	Initial values	Instructions
M1	**Feed**	**Set feed motor mode parameters**	
M1.1	Feeding mode	**Air**	Air(pneumatic feed), Motor1(stepper motor), Motor2(regular motor) Optional. The following parameters are only visible when set to

			Motor1/ Motor2.
M1.2	Feeding motor number	**0**	Set the generator number corresponding to the recipe number. Range: 0 to 4.
M1.3	Feeding frequency	**12000**	Range: 0 to 50,000 (Hz)
M1.4	Fast-feeding pulse count	**7750**	Range: 1 to 60,000.
M1.5	Middle-feeding pulse count	**4300**	Range: 1 to 60,000.
M1.6	Slow-feeding pulse count	**1800**	Range: 1 to 60,000.
M1.7	Starting frequency	**2000**	Feed motor start frequency. Range: 0~50000. (Unit: Hz) (This value cannot be greater than the feeding motor frequency)
M1.8	Acceleration time	**200**	Feed motor acceleration time. Range: 0~9999. (Unit: ms)
M1.9	Deceleration time	**50**	Feed motor deceleration time. Default: 50, range: 0 to 9999. (Unit: ms)
M1.10	Feed door opening direction signal status	**0**	0- When the signal is invalid, the direction of opening the door: when the feeding door is opened, the feeding stepper motor rotation direction signal output is invalid, and the direction signal output is effective when the closing action is closed; 1- When the signal is effective, it is the direction of opening the door: when the feeding door is opened, the feeding stepper motor rotation direction signal output is effective, and the direction signal output is invalid when the closing action.
M1.11	Power back to zero frequency	**2000**	When the power is off and restarted, the feed motor returns to the origin at this frequency. Range: 0~50000. (Unit Hz)
M1.12	Fast feed time	**0**	Time required when the feed door is open to the fast feed position (s). Range: 0~99.99. (Unit s)
M1.13	Medium feed time	**0.4**	Time required when the feed door is open to the feed position. Range: 0 to 99.99. (Unit s)
M1.14	Slow feed time	**0.2**	Time required when the feed door is open to the slow feed position. The value ranges from 0 to 99.99. (Unit s)
M1.15	Closing in place signal type	**0**	0- in place when the signal is valid (consider the door to be in place when the input is valid) 1- In place when signal is not valid (when input is not valid, the door is considered in place)

M1.16	Filler Gate Close Over-time	**4.0**	Range: 0.0 to 99.9 (s)
M1.17	Discharge real-time detection switch	**OFF**	ON/OFF optional; Set to "ON" to detect limit signals in real time; When "off", the limit signal is detected only when starting the feeding. (Note: Discharge mode is valid in motor mode)
M1.18	Feeding does not use the position signal	**OFF**	OFF: feeding use in place signal, ON: feeding do not use in place signal (Note: feeding mode is step motor mode, parameters can be seen)
M1.19	Feed off pulse count	**100**	Range: 1 to 60,000. (This parameter only works when the feeding does not use the ON signal) Note: For example, the meter opens the door for 10000 pulses, and the door is closed (10000+ the number of charging closed pulses), and some more pulses are output when closing the door to ensure that the door is in place.

3.5.2 Clamp/loose bag motor parameters

No.	Parameters	Initial values	Instructions
M2	**PACK**	**Set the clamp/loose bag motor mode parameters**	
M2.1	Clamp/loose bag mode	**Air**	Air(pneumatic clamp/release bag), Motor1(step motor clamp/release bag), Motor2(motor double limit clamp/release bag), Motor3(motor single limit clamp/release bag) selection. When it is set to Motor1/ Motor2/ Motor3, the following parameters are visible. For Motor1, M2.1~M2.9, M2.12~M2.15 can be set; In Motor2, M2.11~M2.13 can be set; In Motor3, M2.10~M2.11 can be set;
M2.2	Bag nipping frequency	**30000**	Range:0 to 50,000 (Hz)
M2.3	Loose bag frequency	**20000**	Range: 0 to 50,000 (Hz)
M2.4	Number of bag nipping pulses	**12000**	Range: 1 to 60,000
M2.5	Starting frequency	**2000**	Range: 0 to 50000 (Hz) (this value cannot be greater than the pocket frequency)
M2.6	Acceleration time	**200**	Range: 0.0 to 9999 (ms)
M2.7	Deceleration time	**50**	Range: 0.0 to 9999 (ms)
M2.8	Bag nipping direction signal status	**0**	0- The direction signal output is invalid when the bag is held: when the bag is held by the bag holding mechanism, the direction signal output of the bag holding step-

			per motor is invalid, and the direction signal output is effective when the bag is held; 1- The direction signal output is effective when the bag is pinched: when the bag is pinched, the output of the rotating direction signal of the stepper motor is effective, and the output of the direction signal is invalid when the bag is pinched.
M2.9	Power Zero frequency	**2000**	When the power is off and restarted, the feed motor returns to the origin at this frequency. Range: 0~50000. (Unit Hz)
M2.10	Loose bag effective time	**0.5**	Motor mode is Motor3 loose bag effective time. Default: 0.5, range: 0 to 99.99. (Unit s)
M2.11	Loose bag process time out	**3.0**	Range: 0.0 to 99.9. (Unit s)
M2.12	Bag nipping timeout	**3.0**	Range: 0.0 to 99.9. (Unit s)
M2.13	Loose bag in place signal type	**0**	0- in place when the signal is valid (consider the door to be in place when the input is valid) 1- In place when signal is not valid (when input is not valid, the door is considered in place)
M2.14	Clamp/loose bags do not use a position signal	**OFF**	OFF: clamp/loose bags use the in place signal, ON: clamp/loose bags do not use the in place signal (Note: clamp/loose bag mode is stepper motor mode, parameters can be seen)
M2.15	Number of loose pocket pulses	**100**	Range: 1 to 60,000. (This parameter only works when the clamping bag is not used for the position signal is ON) Note: For example, the instrument loosening bag 10000 pulses, the clamping bag is (10000+ the number of loosening bag pulses), and some more pulses are output when loosening bag to ensure that the loosening bag is in place.

3.5.3 Discharge parameters (valid in hopper mode)

ID	Parameters	Initial values	Instructions
M3	DISC	Set the discharge motor mode parameters	
M3.1	Discharging mode	**Air**	Air(pneumatic mode), Motor1(stepper motor), Motor2(motor single limit discharge), Motor3(motor double limit discharge), Motor4(motor rotation one week discharge). The following parameters are only visible when set to Motor1/ Motor2/ Motor3. For Motor1, M3.1 to M2.9, M3.12 to M2.15 can be set; For Motor2, M3.10, M3.12 and M3.13 can be set;

			In Motor3, M2.11~M2.13 can be set; In Motor4, M2.10, M2.12, M2.13 can be set.
M3.2	Discharge opening frequency	**30000**	Range: 0 to 50,000 (Hz)
M3.3	Closing gate frequency of discharging	**20000**	Range: 0 to 50,000 (Hz)
M3.4	Number of discharge pulses	**12000**	Range: 1 to 60,000.
M3.5	Starting frequency	**2000**	Range: 0 to 50,000. (Unit Hz) (this value cannot be greater than the discharge frequency).
M3.6	Acceleration time	**200**	Range: 0.0 to 9999 (ms)
M3.7	Deceleration time	**50**	Range: 0.0 to 9999 (ms)
M3.8	Discharge direction signal status	**0**	0- The direction signal output is invalid when the discharging mechanism is open: the direction signal output of the discharging stepper motor is invalid when the discharging mechanism is open, and the direction signal output is effective when the door is closed; 1- The direction signal output is effective when the discharging mechanism opens the door: when the discharging mechanism opens the door, the output of the discharging stepper motor rotation direction signal is effective, and the output of the direction signal is invalid when the closing action.
M3.9	Power back to zero frequency	**2000**	When the power is off and restarted, the discharge motor returns to the origin at this frequency. Range: 0~50000. (Unit Hz)
M3.10	Discharge door output time	**1.00**	Motor opening signal output time. Range: 0.00~99.99 (s)
M3.11	Discharging door timeout	**3.0**	Range: 0.0 to 99.9. (Unit s)
M3.12	Closing time for discharging	**3.0**	Range: 0.0 to 99.9. (Unit s)
M3.13	Discharging position signal type	**0**	0- In place when the signal is valid (consider the door to be in place when the input is valid). 1- In place when the signal is invalid (the door is considered to be in place when the input is invalid).
M3.14	Do not use the position signal	**OFF**	OFF: discharge door use in place signal, ON: discharge door do not use in place signal

	for discharging door		(Note: discharge mode is stepper motor mode, parameters can be seen)
M3.15	Number of discharge door closing pulses	**12000**	Range: 1 to 60,000. (This parameter only works when the unloading door is not in place and the signal is ON)

3.6 Batch and cumulative

The instrument has a cumulative statistical function, which can view the number of batches set, view and clear the cumulative weight, cumulative number, and number of remaining batches. For specific operations, you can see the button function in 1.2 panel description.

※ The cumulative content can be printed out. For details, see section 5.1 Printing Methods.

3.7 IO module (IO)

GMC-X9042 provides 12 input and 16 output interfaces to connect the instrument with external devices. Among them: OUT12, OUT13, OUT14, OUT15, OUT16 can be selected as high-speed IO control (PWM) output.

The working parameters of the scale structure is not the same, the corresponding input, output factory definition is different, the content is as follows (output 1-16 corresponds to the instrument OUT1~OUT16 interface, input 1-12 corresponds to the instrument IN1~12 interface),

The default definition with hopper:

Output		**Input**	
OUT01	O01 Run	**IN01**	I01 Start
OUT02	O02 Stop	**IN02**	I02 E-stop
OUT03	O03 Co-Fi	**IN03**	I03 Slow stop
OUT04	O04 Me-Fi	**IN04**	I05 Zero
OUT05	O05 Fi-Fi	**IN05**	I06 Clear alarm
OUT06	O06 Clamp bag	**IN06**	I08 Clear total cumulative
OUT07	O07 Waiting	**IN07**	I07 Clamp/loose bag request
OUT08	O08 Weigh OK	**IN08**	I09 Manual discharge
OUT09	O09 Discharge	**IN09**	I10 Slow feed manually
OUT10	O10 Zone Zero	**IN10**	I11 Fast feed manually
OUT11	O11 Patting bag	**IN11**	I13 Select recipes
OUT12	O13 Feed	**IN12**	I12 Empty materials
OUT13	O14 Lack material	Note: In interlock mode. IN12 is interlock input. OUT16 is the interlock output.	
OUT14	O15 Alarm		
OUT15	O17 Batch completed		
OUT16	O16 Over/under		

Default definition without hopper:

Output		**Input**	
OUT01	O01 Run	**IN01**	I01 Start
OUT02	O02 Stop	**IN02**	I02 E-Stop
OUT03	O03 Co-Fi	**IN03**	I03 Slow stop
OUT04	O04 Me-Fi	**IN04**	I04 Pause
OUT05	O05 Fi-Fi	**IN05**	I05 Zero

OUT06	O06 Clamp bag	**IN06**	I06 Clear alarm
OUT07	O07 Waiting	**IN07**	I07 Clamp/loose bag request
OUT08	O10 Zone Zero	**IN08**	I08 Clear total cumulative
OUT09	O11 Patting bag	**IN09**	I10 Slow feed manually
OUT10	O15 Alarm	**IN10**	I11 Fast feed manually
OUT11	O13 Feed	**IN11**	I13 Select recipes
OUT12	O27 Loose bag	**IN12**	I12 None (undefined)
OUT13	O14 Lack material	Note: In interlock mode. Change IN12 to I39 interlock input. OUT12 is changed to O14 lack material. OUT13 changed to O17 batch completed. OUT14 changed to O44 sewing machine OUT15 change to O42 Conveyor 1. OUT16 change to O18 interlock output.	
OUT14	O17 Batch completed		
OUT15	O16 Over/under		
OUT16	O44 Sewing machine		

Jumbo scale Default definition:

Output Definition		**Input**	
OUT01	O01 Run	**IN01**	I01 Start
OUT02	O02 Stop	**IN02**	I02 E-Stop
OUT03	O03 Co-Fi	**IN03**	I03 Slow stop
OUT04	O04 Me-Fi	**IN04**	I04 Pause
OUT05	O05 Fi-Fi	**IN05**	I05 Zero
OUT06	O06 Clamp bag	**IN06**	I06 Clear alarm
OUT07	O31 Hanging bag	**IN07**	I08 Clear total cumulative
OUT08	O34Measuring bracket up	**IN08**	I07 Clamp/loose bag request
OUT09	O07 Waiting	**IN09**	I32 lifting bag
OUT10	O10 Zone Zero	**IN10**	I35 Manual bracket up/down input
OUT11	O33 Return air valve	**IN11**	I10 Manual Slow feed (button)
OUT12	O32 Blow	**IN12**	I11 Manual Fast feed (button)
OUT13	O15 Alarm		
OUT14	O17 batch completed		
OUT15	None (undefined)		
OUT16	None (undefined)		

Valve scale default definition:

Output		**Input**	
OUT01	O01 Run	**IN01**	I01Start
OUT02	O02 Stop	**IN02**	I02 E-stop
OUT03	O03 Co-Fi	**IN03**	I03 Slow stop
OUT04	O04 Me-Fi	**IN04**	I04 Pause
OUT05	O05 Fi-Fi	**IN05**	I05 Zero
OUT06	O06 Patting bag	**IN06**	I06 Clear alarm
OUT07	O07 Waiting	**IN07**	I08 Clear total cumulative

OUT08	O17batch completed	**IN08**	I07 Clamp/loose bag request
OUT09	O10 Zone Zero	**IN09**	I10 Manual Slow feed(button)
OUT10	O11 Patting bag	**IN10**	I11 Manual Fast feed (button)
OUT11	O13 Feed	**IN11**	I13 Choose the recipe
OUT12	O15 Alarm	**IN12**	I12None (undefined)
OUT13	O16 Over/Under		
OUT14	O30 Push bag		
OUT15	O29 Lift Bag		
OUT16	O42 Conveyor 1		

PLC mode Default definition:

Output		**Input**	
OUT01	O03 Co-fi	**IN01**	I05 Zero
OUT02	O04 Me-Fi	**IN02**	I06 Clear alarm
OUT03	O05 Fi-fi	**IN03**	None (undefined)
OUT04	O38 Overshoot (PLC)	**IN04**	None (undefined)
OUT05	O39 Under(PLC)	**IN05**	None (undefined)
OUT06	O40 Upper limit (PLC)	**IN06**	None (undefined)
OUT07	O41 Lower limit (PLC)	**IN07**	None (undefined)
OUT08	None (undefined)	**IN08**	None (undefined)
OUT09	None (undefined)	**IN09**	None (undefined)
OUT10	None (undefined)	**IN10**	None (undefined)
OUT11	None (undefined)	**IN11**	None (undefined)
OUT12	None (undefined)	**IN12**	None (undefined)
OUT13	None (undefined)		
OUT14	None (undefined)		
OUT15	None (undefined)		
OUT16	None (undefined)		

3.7.1 Definition of Output and Input Ports (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 parameters can be modified through the menu interface. Each IO module corresponds to a code, as follows:

IO Module content description

Output		
Code	**Content**	**Instructions**
O00	Undefined	If the port number is defined as 0, the output port is undefined.
O01	Run	When the instrument is in the running state, the defined output signal is valid.
O02	Stop	When the instrument is in the stopped state, the defined output signal is valid.
O03	Co-Fi	Large discharge port for controlling the feeding mechanism. In the feeding process, the current weight is less than the target value -

		coarse flow remains, the defined output signal is effective.
O04	Me-Fi	Central discharge port for controlling the feeding mechanism. In the feeding process, the current weight is less than the target value - medium flow remains, the defined output signal is effective.
O05	Fi-Fi	Small discharge port for controlling the feeding mechanism. In the feeding process, when the current weight is less than the target value - the free fall, the defined output signal is effective.
O06	Clamp bag	Used to control the bag clamping mechanism, If the signal is valid, the bag will be clamped; The signal is invalid, that is, loose the bag.
O07	Waiting	Used to indicate the end of the feeding process. The end of slow feeding until discharge (with hopper) or patting bag (without hopper), the defined output signal is effective.
O08	Weighing OK	After the waiting is complete, the defined output signal is valid.
O09	Discharging	Discharge door for controlling measuring hopper. The defined discharge output signal is effective when the discharge starts, so that the material is discharged from the measuring hopper into the packaging bag.
O10	Zone Zero	When the current weight of the scale is less than the set near zero value, the define output signal is valid
O11	Patting bag	Used to control patting bag . Pulse signal with pulse width and frequency controllable.
O12	Cutting material	This output is valid during feeding, but not during non-feeding.
O13	Supply material	A feeding mechanism used to control the front end of the packaging scale, which is effective when the hopper level input (level input defined) is invalid; When the upper material level of the preparation hopper (the upper material level input is defined) is valid, the instrument invalidates this output..
O14	Lack material	When the lowering level input is defined and the input is invalid, the defined output port is valid; when the lowering level of the preparation hopper (the lowering level input is defined) is valid, the instrument invalidates the output.
O15	Alarm	When the meter is out of tolerance, batch number to alarm, define the output signal is effective.
O16	Over/under	When over or under, the defined output signal is valid.
O17	Batch completed	The defined output signal is valid when the set number of batches is completed.
O18	Interlock output	Used in dual scale mode, connected to the switching "interlock input" of another instrument.
O19	Feeding pulse	When the charging mode is set to the stepper motor mode to control the feeding door switch: the signal is used as the pulse signal output to the stepper motor driver to control the motor rotation. Note: This function can only be defined on one of the ports of OUT12~16.

O20	Feeding direction signal	When the feeding mode is set to the stepper motor mode to control the feeding door switch: the signal is used as the motor rotation direction signal output to the stepper motor driver to control the positive and negative rotation of the motor. Note: This function can only be defined on one output port, there can be no more than one output to define the function. It can only be defined on one of the ports OUT1 to 11.
O21	Clamp/loose bag pulse	When the bag mode is set to the stepper motor mode to control the bag loosening: the signal is used as the pulse signal output to the stepper motor driver to control the motor rotation. Note: This function can only be defined on the port of one of OUT12~16.
O22	Clamp/loose bag direction signal	When the clamp bag mode is set to the stepper motor mode to control the bag loosening: the signal is used as the motor rotation direction signal output to the stepper motor driver to control the positive and negative rotation of the motor. (No hopper mode is valid) Note: This feature can only be defined on one port, there cannot be multiple ports defining the feature. It can only be defined on one of the ports OUT1 to 11.
O23	Discharge pulse	When the discharging mode is set to step motor control discharging: the signal is used as the pulse signal output to the step motor driver to control the motor rotation. Note: This function can only be defined on the port of OUT12~16.
O24	Discharge direction signal	When the discharging mode is set to the stepper motor control discharging: the signal is output to the motor rotation direction signal of the stepper motor driver to control the positive and negative rotation of the motor. Note: This function can only be defined on one output port, there can be no more than one output to define this function. It can only be defined on one of the ports OUT1 to 11.
O25	Open gate when feeding	When the feeding mode is set to the ordinary motor mode to control the feeding door switch: it is used to control the large discharge door of the weighing feeding mechanism. When the feeding process begins, this signal is effective, and the effective time is set in the motor parameters.
O26	Close gate when feeding	When the feeding mode is set to the ordinary motor mode to control the feeding door switch: it is used to control the closing action of the feeding mechanism port, respectively, the signal is effective at the end of the fast feeding, middle feeding and slow feeding. The effective time is determined according to the time parameter set in the motor parameters. The signal is effective at the end of the feeding until the feeding limit is effective.
O27	Loose bag	When the bag clamping mode is set to the ordinary motor control bag loosening: it is used to control the bag loosening. When the signal is effective, the motor is driven to loosen the bag. When the signal is invalid, the bag loosening action stops.

O28	Close gate when discharging	When the discharging mode is set to the normal motor positive and negative rotation control discharging: it is used to control the closing action of the discharging door of the measuring hopper. When the signal is effective, the motor is driven to discharge and close the door. When the signal is invalid, the closing action stops.
O29	Lift bag	Used to control the bag lifting mechanism, the signal effectively realizes the bag lifting action.
O30	Push bag	Used to control the bag pushing mechanism, the signal effectively realizes the bag pushing action.
O31	Lifting bag	Used to control the lifting bag mechanism, the signal effectively realizes the lifting bag; The signal is invalid that loosens the hook.
O32	Blow	Used to control the operation of the air blowing device. This signal is valid when the measuring bracket ends.
O33	Return valve	Used to control the operation of the return air valve, the signal is effective when the blow is over.
O34	Measuring Bracket up	For controlling the downward movement of the measuring bracket. Before feeding, if the lifting bag and the clamping bag have been completed, the signal is effective until the upper limit input is effective. The output of the signal is effective after the bagging is completed. Until the lower limit input is valid.
O35	Measuring bracket down	Used to control the descending of the measuring support. (When there is a slap bag function, it needs to be started after the end of the slap bag).
O36	Belt A	In electric mode, it is used to control the operation of belt A. After loosening the bag and lifting the hook, the signal is effective. (This parameter is not available)
O37	Belt B	In electric mode, used to control the operation of belt B, the signal is effective when belt A stops. (This parameter is not available)
O38	Over(PLC)	When over (PLC), the signal is valid.
O39	Under (PLC)	When under (PLC), the signal is valid.
O40	Upper limit (PLC)	Upper limit output is valid when weighing value > upper limit value.
O41	Lower limit (PLC)	Lower limit output is valid when weighing value < lower limit value.
O42	Conveyor 1	The hopper-less mode is used to control the start and stop of the conveyor. The signal is effective to start the conveyor, and the signal is invalid to stop the conveyor.
O43	Coding	When the bag clamping signal output is valid and the coding delay is over, this coding signal is output.
O44	Sewing machine	When the input of the sewing machine is valid, the output of the sewing machine is valid.

O45	Cutting machine	After the end of the output time of the sewing machine, the output is valid, and the effective time is the output time of the cutting machine.
O46	Auxiliary Pulse 1	After the input of auxiliary pulse 1 is effective, output pulse signal (effective time is the effective time of auxiliary pulse 1, invalid time is the invalid time of auxiliary pulse 1), output the total execution time to stop the output (the total execution time is set to 0, it has been output by pulse).
O47	Auxiliary Pulse 2	After the input of auxiliary pulse 2 is effective, output pulse signal (effective time is the effective time of auxiliary pulse 2, invalid time is the invalid time of auxiliary pulse 2), output the total execution time to stop the output (the total execution time is set to 0, then always press the pulse output).
O48	Auxiliary Pulse 3	After the input of auxiliary pulse 3 is effective, output pulse signal (effective time is the effective time of auxiliary pulse 3, invalid time is the invalid time of auxiliary pulse 3), output the total execution time to stop the output (the total execution time is set to 0, it has been output by pulse).
O49	Auxiliary Pulse 4	After the input of auxiliary pulse 4 is effective, output pulse signal (effective time is the effective time of auxiliary pulse 4, invalid time is the ineffective time of auxiliary pulse 4), output the total execution time to stop the output (the total execution time is set to 0, then always press the pulse output).
O50	Discharge vibration	The output of the discharge vibration function.
O51	Logic Programming 1	The output signal of logic programming output 1.
O52	Logic Programming 2	Logic programming outputs the output signal of 2.
O53	Logic Programming 3	Logic programming outputs the output signal of 3.
O54	Logic Programming 4	Logic programming outputs the output signal of 4.
O55	Logic Programming 5	Logic programming outputs the output signal of 5.
O56	Logic Programming 6	Logic programming outputs the output signal of 6.
O57	Multifunctional bracket controls the shooting bag	For integrated control stand and shooting bag. (jumbo bag scale mode) When the bag is not executed: this IO module is the same as the ascending state of the measuring bracket. When the patting bag function is turned on: this IO module is opposite to the state of the patting bag. (The patting bag effective bracket is invalid, and the patting bag invalid bracket is effective).
O58	Conveyor 2	Control conveyor 2 Output effective.
O59	Conveyor 3	Control conveyor 3 Output effective.

O60	Conveyor 1 Reverse	Control conveyor 1 Reverse the output effectively.
O61	Traction slider pulse	This signal is used as a pulse signal output to the traction slider stepper motor driver to control the motor rotation. Note: This function can only be defined on one of the ports of OUT12~16.
O62	Traction slider direction signal	The signal is used as the motor rotation direction signal output to the traction slider stepper motor driver to control the positive and negative rotation of the motor. (No hopper mode is valid) Note: This function can only be defined on one port, not multiple outlets. It can only be defined on one of the ports OUT1 to 11.
O63	Traction clip bag pulse	The signal is output to the traction pocket stepper motor driver pulse signal, control motor rotation. Note: This function can only be defined on the port of one of OUT12~16.
O64	Traction clip bag direction signal	The signal is used as the motor rotation direction signal output to the traction pocket stepper motor driver to control the positive and negative rotation of the motor. (No hopper mode is valid) Note: This feature can only be defined on one port, there cannot be multiple ports defining the feature. It can only be defined on one of the ports OUT1 to 11.
O65	Hold bag	Control the output of the support bag.
Input		
I00	Undefined	If the port number is defined as 0, the input port is undefined.
I01	Start	The signal active instrument will enter the operating state. This input is a pulse input signal.
I02	E-Stop	The signal effective instrument will return to the stop state. This input is a pulse input signal.
I03	Slow Stop	The signal active meter will return to the stopped state after completing the current packaging process. This input is a pulse input signal.
I04	Pause	The signal effective instrument will suspend work, retain the current state, and resume the working state after receiving the start signal. This input is the pulse input signal.
I05	Zero	The signal active instrument will be cleared to zero weight. This input is a pulse input signal.
I06	Clear Alarm	Use to clear the alarm output of the instrument. This input is the pulse input signal.
I07	Clamp/loose bag request	Used to control the action of the bag clamping mechanism, the input is effective once the bag output is effective, and the output is invalid if the bag is effective again. (i.e. : loose bag).
I08	Clear total cumulative	Clearing total accumulated weight and batches will clear both recipe and user accumulations.
I09	Manual discharge (push button)	Used to manually remove material from the measuring hopper. The input is valid for one discharge and the output is valid for another discharge and the output is invalid.

I10	Manual Slow feed(button)	This input is valid once slow add output is valid again slow add output is not valid.
I11	Manual Fast feed (button)	Pulse type signal. Operates in the stop state and is used to manually turn the instrument on and off in the fast feed state. Effective once on, effective again off.
I12	Clear stock	Pulse type signal. Works in the stopped state and is used to empty the storage hopper while opening the discharge door and the charging door. Effectively open once, effectively close again. (No hopper, PLC, valve port, jumbo bag mode is not valid)
I13	Select Recipes	This input is valid once, the recipe number changes to the next recipe whose target value is not zero, skipping the recipe number whose target value is zero.
I14	Upper level	A loading level for connecting to a prep hopper. The input should be a level input.
I15	Under level	A level feeder for connecting to the prep hopper. The input should be a level input. An invalid or dangling level input indicates a lack of material. A valid level input indicates no shortage of material.
I16	Start/E-stop	If the signal is valid, the instrument will enter the running state, and if it is invalid, it will return to the stop state. This input is a level signal.
I17	Start/slow stop	If the signal is valid, the instrument will enter the running state, and if it is invalid, it will return to the stopped state after completing the current packaging process. This input is a level signal.
I18	Manual discharging (discharging)	Used to manually remove material from measuring hoppers. This input is valid discharge output is valid, this input is invalid discharge output is invalid.
I19	Manual Slow loading (discharging)	The signal is effective slow loading signal output is effective, the signal is invalid slow loading signal output is invalid.
I20	Manual Fast feed(discharge)	The signal is effective fast feeding signal output is effective, the signal is invalid fast feeding signal output is invalid.
I21	Clamp bag in place	If the input is defined, it effectively means that the clamp bag is in place, and if it is not, it is not in place. No hopper mode: in the bag state, the instrument must detect that the "clamp bag in place" input is effective before starting to feed. In the feeding process, the signal is not detected whether it is effective. The input should be level input.
I22	Discharge door open in place	When the discharge mode is set to the normal motor reverse and reverse double limit mode to control discharge, the signal is used as the limit input signal of the discharge door opening in place. When the instrument detects that the signal is effective, it is considered that the discharge door has been opened.
I23	Feed door closed in place	When the discharge mode is set to the normal motor positive and negative double limit mode to control discharge, the signal is used as the limit input signal of the feeding door closed in place. When the instrument detects that the signal is effective, it is considered

		that the charging door has been closed.
I24	Discharge door closed in place	The signal is used as the limit input signal for the discharging door to close in place. When the instrument detects that the signal is effective, the discharging door is considered to be closed.
I25	Loose bag in place	Bag clamping mode is set to step motor clip bag/motor double limit clip bag mode control clip bag: the signal is used as the limit input signal of bag clamping mechanism loose bag in place. (Note: the signal is determined by the type of the signal in place, and is set to positive logic: when the input signal is effective, it is considered that the bag holding mechanism has been loosened in place; Set to inverse logic: when the input signal is invalid, it is considered that the bag clamping mechanism has been loosened in place)
I26	Sewing machine start	When the input is valid, start the effective output of the sewing machine.
I27	Sewing machine emergency stop	When the input is effective, the sewing machine stops output.
I28	Auxiliary Pulse 1	Custom trigger input signal for auxiliary pulse 1.
I29	Auxiliary Pulse 2	Custom trigger input signal for secondary pulse 2.
I30	Auxiliary Pulse 3	Custom trigger input signal for auxiliary pulse 3.
I31	Auxiliary Pulse 4	Custom trigger input signal for auxiliary pulse 4.
I32	Lifting bags	Used to control the action of the lifting bag mechanism.
I33	Bracket up in place	Used to connect the upper limit of the standby measuring bracket, the input should be a level input.
I34	Bracket down in place	Used to connect the lower limit of the standby measuring bracket, the input should be a level input.
I35	Manual bracket up/down input	Used to control the movement of the bracket, the input is a pulse input. The motion of the bracket can be controlled in the stopped state. In the running state, the starting signal for the movement of the bracket.
I36	Bracket down and down in place (level)	The bottom stop for connecting the measuring bracket, this input should be a level input. (This parameter is not available)
I37	Belt A Stop input (this parameter is retained)	In electric mode, the stop detection sensor used to connect belt A shall be a pulse input. (This parameter is not available)
I38	Belt B Stop input (this pa-	In electric mode, the stop detection sensor used to connect belt B should be a pulse input. (This parameter is not available)

	rameter is retained)	
I39	Interlock input	Used in dual scale mode to connect the switching "interlock output" of another controller.
I40	Logic programming input 1	Custom trigger input signal for Logic Programming 1.
I41	Logic Programming input 2	Custom trigger input signal for Logic Programming 2.
I42	Logic programming input 3	Custom trigger input signal for Logic Programming 3.
I43	Logic programming input 4	Custom trigger input signal for Logic Programming 4.
I44	Logic Programming input 5	Custom trigger input signal for Logic Programming 5.
I45	Logic programming input 6	Custom trigger input signal for Logic Programming 6.
I46	Feed request	If the feeding request input is defined in the IO, judge whether the feeding request input is effective before the feeding process, and start the feeding process if it is effective, and wait if it is invalid.
I47	Discharge request	The discharge request input is only for the hopper structure, such as the discharge request input is defined in IO, and it is necessary to judge whether the discharge allowed input is effective after setting the value, and the discharge process starts if it is effective, and the discharge process is invalid.
I48	Manual conveyor 1 forward turn	In the stopped state, manually control the conveyor to start the forward turn. (When the signal is effective, the forward turn output of conveyor 1 is invalid)
I49	Manual Conveyor 1 Reverse turn	Control the conveyor to start the reversal. (When the signal is active, the conveyor 1 reverse output is not effective)
I50	Conveyor 2 Limit	Conveyor 2 in place signal.
I51	Conveyor 3 Limit	Conveyor 3 in place signal.
I52	Slider moves back to position	The signal acts as the limit input signal for the slider to be in place, and the instrument considers the slider to be in place when it detects that the signal is effective.
I53	Clamped arm and loosed bag in place	The signal is used as the limit input signal that the clamp arm is in place. When the instrument detects that the signal is effective, it is considered that the clamp arm loose bag is opened.

I54	Cut material in place	If the input is defined, it effectively means that the cut is in place, and if not, it means that the cut is not in place.

3.7.2 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 in and output Test out.

Output test: register address 1730~1731 (4x1731~4x1732), coil address 0163~0178 (0x0164~0x0179), the address is detailed in the chapter 5.3.3 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 test: register address 1729 (4x1730), coil address 0150~0162(0x0151~0x163), the address is detailed in the chapter 5.3.3 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.

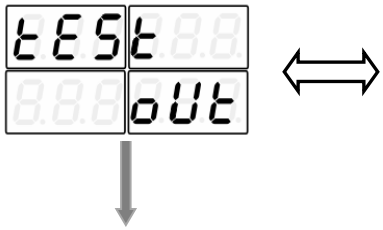
Input test

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

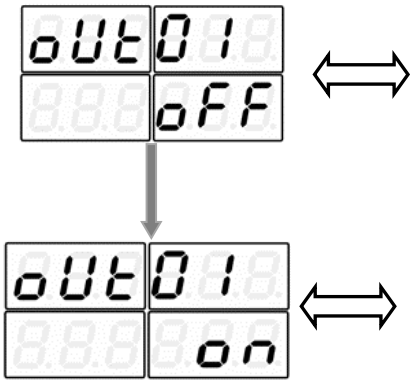
Test the input , press the button ENTER.

At this time, IN1 input is valid, and the in the first position is F change to O, indicating that the port is connected normally. Other interfaces are also tested in the same way. If the external input is effective 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 switch connection again.

Output test



Output switch test interface.



Take OUT1 as an example.

Set the current OUT01 to ON, at which point the state of the currently connected external device switches. Other outputs are also tested and switched to ON. If the external device does not respond, check the connection of the output outlet.

4.Function Description

4.1 Set work mode

The GMC-X9042 has 5 scale configurations. The scale structure and operating mode can be Set under Operating Parameters (Set up). Scale structure optional: hopper scale, no hopper scale, PLC mode, jumbo bag scale, valve scale.

Note: The working mode of the hopper scale and the hopper-free scale supports the dual scale interlock mode. Other scales do not support dual scale interlocking mode.

4.2 Number of batches

The number of batches can be set by long key 

2s under the main interface.

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 Batch 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 instrument does not detect whether the blanking level signal is valid.

4.3.2 Single feed level

The drop level is defined, the feed level is not defined, corresponding to the single level situation. At this time, the instrument 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 instrument does not detect whether the blanking level signal is valid.

The upper and lower levels 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.

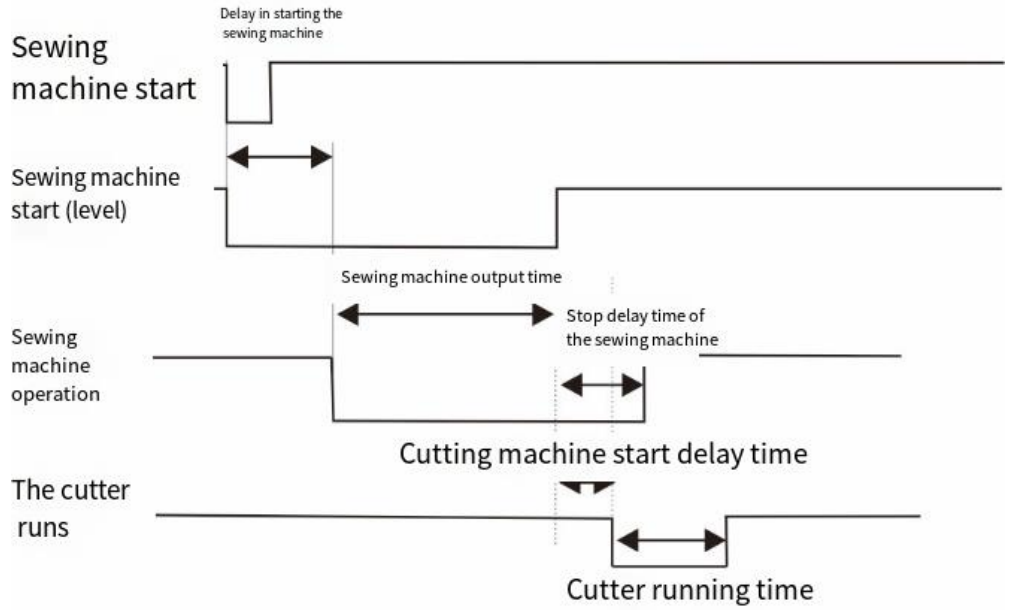
4.4 Sewing machine control

The IO module involved in the function of the sewing machine is: the output IO module - "sewing machine", "cutting machine"; Input IO module - "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 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 Vibration control of discharging material

The discharge vibration function involves the IO: output switching - "discharge vibration".

When the discharge vibration switch is on, if the current discharge time is greater than the set discharge effective time, the discharge vibration output will start, according to the combination of the effective time of one discharge vibration and the invalid time of one discharge vibration into one discharge vibration. When the discharge vibration number reaches the set discharge vibration number, the discharge vibration process will end and the output alarm will stop.

4.6 Feeding and discharging timeout alarm function

If the " **Feeding** and discharging timeout detection switch" is opened, in the running state, during the process of fast, medium and slow loading and discharging , the current process delay is greater than the set fast, medium and slow loading and discharging timeout time, the output timeout alarm and stop.

4.7 Auxiliary pulse function

The IO module involved in the auxiliary pulse function is: "auxiliary pulse input 1~4", "auxiliary pulse output 1~4".

Take auxiliary pulse 1 as an example:

Pulse mode:

In the stopped or running state of the instrument, when the input "auxiliary pulse input 1" is effective, the output "auxiliary pulse output 1" starts to output, continue to output the set "auxiliary pulse 1 effective time", when the time is up, stop the output, wait for the set "auxiliary pulse 1 invalid time" to start output again. Stop output until the "total execution time of auxiliary pulse 1" arrives, and turn off the auxiliary pulse switch.

If "Total Execution Time of Auxiliary Pulse 1" is set to 0, the output process will continue to loop.

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

Level mode:

1. Set parameters and IO parameters: click the parameter [auxiliary pulse mode] in [Peripheral parameters] - [auxiliary pulse], select the corresponding pulse setting [level mode] type, set the corresponding pulse [auxiliary pulse effective time] to 2 seconds, set the corresponding pulse [auxiliary pulse invalid time] to 2 seconds. Select the input port and output port of the auxiliary pulse in the parameter of [IO Function Definition].

2. Perform the operation: select [level mode], continue to give the high level at the input end of the setting, give the high level at the same time start the auxiliary pulse effective time, and remain effective until the auxiliary pulse effective time ends 2s. At this time, the output of trigger signal becomes invalid, until the end of the invalid time of auxiliary pulse 2s. After the invalid time of the auxiliary pulse is over, the output end becomes effective again, and the effective time of the auxiliary pulse is restarted, and the cycle is repeated. Until the input no longer inputs a high level, the output signal port no longer outputs a high or low level.

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 remain, Medium remain, slow remain, COMP Inhibit Timer(Co-F), COMP Inhibit Timer(Me-F) and COMP Inhibit Timer(Fi-F) in the feeding process, so that the feeding speed and accuracy can be optimized. (After the adaptive 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 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 Bracket operation mode

The motion mode of the support is divided into: pneumatic - unlimited position, electric - double limit, pneumatic - double limit.

Pneumatic - unlimited position mode description:

IO module output: measuring bracket up

When the measuring bracket goes up, the measuring bracket uplink output is effective. After the support uplink delay time, it indicates that the support uplink is in place. (In operation, after the uplink is in place, the instrument can begin to peel, add materials, etc.)

When the measuring support is descending, the uplink output of the measuring support is invalid, and after the support descending delay time, it indicates that the support is descending in place. (In operation, after descending into place, the instrument can begin to remove the hook, etc.)

Electric - double limit mode description:

Input: support up in place, support down in place. output: the metering bracket goes up, and the measuring bracket goes down.

When the measuring bracket goes up, the measuring bracket uplink output is effective, and the measuring bracket downlink output is invalid. Wait for the support uplink to be in place. If the bracket still does not go up in place within the timeout time of the bracket uplink, the bracket rise timeout alarm. After the ascending position is in place, the ascending output and descending output of the measuring bracket are invalid

When the measuring bracket goes down, the measuring bracket goes down output is effective, and the measuring bracket goes up output is invalid. Wait for the support to go down in place. If the support still does not go down in place within the timeout time of the support going down, the support goes up timeout alarm. After descending in place, the descending output of the measuring bracket and the ascending output of the measuring bracket are invalid.

Pneumatic - double limit mode description:

Input: bracket up in place, bracket down in place. output: the metering bracket goes up, and the measuring bracket goes down.

When the measuring bracket goes up, the measuring bracket uplink output is effective, and the measuring bracket downlink output is invalid. Wait for the bracket uplink to be in place. If the support still does not go up in place within the timeout time of the bracket uplink, the bracket rise timeout alarm. After the ascending position is in place, the ascending output of the measuring bracket is effective and the descending output of the measuring bracket is invalid

When the measuring bracket goes down, the measuring bracket goes down output is effective, and the measuring bracket goes up output is invalid. Wait for the bracket to go down in place. If the bracket still does not go down in place within the timeout time of the bracket going down, the bracket goes up timeout alarm. After descending in place, the downward output of the measuring bracket is effective and the upward output of the measuring bracket is invalid

4.10 Patting bag function

The IO involved in the patting bag function is: output IO - "**Patting bag**".

If you need to use the patting bag function, you need to select the patting bag mode in the patting bag parameter under the peripheral parameter. Different scale structure corresponds to different optional patting bag mode.

The patting bag function contains three optional processes in turn: "patting bag after setting value", "patting bag during feeding", "patting bag after setting value during feeding".

After setting the value of the bag:

If the fixed value of the bag is set, after the end of the set value, then directly start the set value of the bag, "patting bag effective time" and "patting bag invalid time" each output once as a shot bag patting, after reaching the "set value of the bag number" stop the set value of the bag output.

In the feeding of the patting bag:

If the in-feed bag is set, during the feeding process, if the current weight is greater than the initial weight of the bag 1, the in-feed bag will start, and the output of "effective time of the bag" and "ineffective time of the bag" will be regarded as one in-feed bag, and the output of the in-feed bag will be stopped after reaching "times of the bag in the feeding bag 1". The initial weight of the three times of the bag in the feeding is provided, which corresponds to the number of three times of the bag. The starting weight of the bag 1, the starting weight of the bag 2, the starting weight of the bag 3, and the corresponding number of times of the bag can be set according to the field situation. (Note: If the feed enters the small casting process, the patting bag will be forced to end.)

Patting the bag after setting the value in the feed

If the equal shot patting bag is set after the fixed value in the feeding, the shot bag is carried out during the feeding process and after the set value. The setting of the shot bag parameters is referred to the fixed value shot bag and the shot bag in the feeding.

Additional patting bag:

After all the patting bag output is finished, an extra patting bag output is carried out. The effective time is the effective time of the extra bag output, and the ineffective time is the ineffective time of the patting bag output. After one beat patting bag output, end the extra beat patting bag output.

4.11 Code

The number of switches involved in the coding function are: "coding".

After the bag is completed, if the coding switch is turned on, and the "coding output effective time" is not 0, then the "coding start delay" is started. After the delay is over, the coding is started. The time is "coding output effective time", and the coding process is over after the time is up.

(Note: If the "Do not allow to feed and discharge switch" is turned on, the function of feeding and discharging materials in the process of coding is prohibited)

4.12 Conveyor

The IO involved in the conveyor function is: "conveyor output".

After setting the value, check whether the "conveyor switch" is open, open the "conveyor start delay" time, delay time until the rear conveyor starts to run, and time "conveyor running time", time until the rear conveyor stops running.

With a hopper scale structure, if the previous scale conveyor is still running, stop the conveyor before discharging.

Under no hopper scale structure, if the previous scale conveyor is still running, stop the conveyor before loosening the bag.

4.13 Printing

After connecting the printer, it is necessary to set the communication parameters of the instrument and select the communication mode as Print. The print format can be selected 24 columns and 32 columns, the print language can be selected in English, and the number of print lines can be set. Refer to 5.1 Printing Method for the specific printing content.

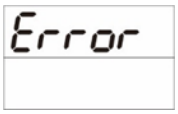
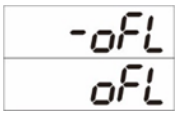
4.14 Character Mapping table

The instrument 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
												
n	**o**	**p**	**q**	**r**	**s**	**t**	**u**	**v**	**w**	**x**	**y**	**z**
												

4.15 Alarm information

	Data out of range
	Zeroing failed
	Operation failed
	overflow -OFL: negative overflow; OFL: positive overflow
	Front - and back-end communication is interrupted

4.16 Fast feed mode function

After the function of fast feeding mode is opened and the instrument enters the fast feeding mode, the instrument feeding ends, will no longer walk the fixed holding time, and directly enter the discharging state. This function is to eliminate the fixed value holding time stage in the feeding process, so as to improve the feeding speed. The final weight result value is predicted by the instrument according to the feeding speed and cutoff amount.

Note: Before the use of this function, it is necessary to adjust each leading parameter in advance, the accuracy has reached the use demand, so that the equipment can maintain the best state, and then open this function. Parameters can be directly in accordance with the default parameters, and then fine-tune according to demand.

5.Serial communication

GMC-X9042 can provide two serial communication interfaces, RS485 and RS232, Cont mode, Re-Cont mode, Modbus mode, printing mode, compatible with 8802S-P Md-SP protocol optional. For detail about serial port parameters, refer to chapter 3.3.2 communication parameters.

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 accumulations 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 cotroller is completed, the format is as follows:

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

5.1.2 Total accumulations printing

In print mode, stop state, write 1 at operation address **1800 (**4x1801), perform the Print Total accumulations action. The format is as follows:

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

PCS: 18 Wt: 84.16 ----------	PCS: 24 Wt: 129.40 ----------

5.1.3 Recipe Accumulations printing

In the print mode, stop state, write **"1~40"** in the operation address **1801 (**4x1802**)**, perform the action of printing the corresponding recipe accumulation, write "41" to print all the recipe accumulation values (automatically skip the recipe with the target value of 0). Format is as follows:

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

5.1.4 User Accumulations Printing

In the printing mode and stop state**,** operation address **1802** (**4x1803**) write "**0~9",** perform the corresponding user accumulation action, write "100" to print the current user accumulation**,** write **"101**" to print the accumulations value of all users (automatically skip the user whose target value is 0). Format is as follows:

The English 24 column print format is as follows:	**The English 32 column print format is as follows:**
All User ACUM Report Time : 2018/6/19 13:29 Unit : kg ---------- User ID : 9 PCS : 16 Wt : 72.26 ----------	All User ACUM Report Time: 2018/6/19 13:37 Unit: kg ---------- User ID: 9 PCS: 22 Wt: 117.50 ----------

5.2 Continuous Mode

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

5.2.1 Continuous mode 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 bytes, 000000000~999999999;

ACUM Weight -- 10 bytes, including decimal points;

Example: The controller 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

means: **1#** scale, the current accumulations number is **100**, the accumulations weight is **0.5000**.

5.3 Modbus-RTU protocol

The communication mode of the communication parameters under the working parameters is Modbus-RTU.

5.3.1 Function code and exception code

◆ Function codes supported by the controller:

Function codes	Name	Instructions
03	Read register	Read up to **125** registers at a time
06	Write a single register	
16	Write multiple registers	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 controller only supports the above **MODBUS** function codes, the controller will not respond when other function codes are fed to the controller.

◆ **MODBUS** exception code response

CODE	Name	Meaning
02	Illegal data address	For this controller, 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 Error	An unrecoverable error occurs when the controller is attempting to perform the requested operation.
07	Unsuccessful programming request	For the controller, the command received cannot be executed under the current conditions.

5.3.2 MODBUS Transfer mode

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

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

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

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

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

Code: **RTU**

5.3.3 MODBUS address assignment

Protocol Address	PLC address	Meaning	Instructions	
0000-0001	**40001-40002**	Gross weight	controller shows gross weight value, signed integer type	
0002-0003	**40003-40004**	Net weight	The controller displays the net weight value with a signed integer	
0004-0005	**40005-40006**	Tare weight	Tare value	
0006-0007	**40007-40008**	Control status (bit)	**Bit**	Instructions
			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**	Running state	**D0**	**0**: Stop; **1**: Run
			D1	Before feeding
			D2	Fast feeding
			D3	Middle feeding
			D4	Slow feeding
			D5	Waiting
			D6	Weighing OK
			D7	Discharge
			D8	Zone Zero
			D9	Over
			D10	Under
			D11	Qualified
			D12	Over/Under Stop
			D13	Lock/Unlock bags
			D14	Bag lift signal (valve scale)
			D15	Bag push signal
			D16	Punching bag (ton bag scale)
			D17	Blow air (ton bag scale)
			D18	Return air valve (ton bag scale)
			D19	Measuring bracket up (ton bag scale)
			D20	Measuring bracket down (electric)(ton bag scale)
			D21	Upper limit (**PLC** mode)
			D22	Lower limit (**PLC** mode)
			D23	Batch completion
			D24	Alarm
			D25	**1:** net weight**,** **0**: gross weight
			D26	Clear stock
			D27	Over **(PLC)**
			D28	Under**(PLC)**
			D29	In no-hopper mode, after loosening the bag, until the end of this feeding, the mark is valid
			D30	Slow Stop
			D31	Pause
0010-0011	**40011-40012**	Control Status **2**	**D0**	Interlock output (interlock mode)
			D1	Loading position

			D2	Unloading postion
			D3	Feeding
			D4	Lack of material
			D5	Cutting material
			D6	Patting bag
			D7	Coding
			D8	Discharging vibration
			D9	Conveyor output
			D10	Sewing output
			D11	Cutter output
			D12	Auxiliary Pulse **1**
			D13	Auxiliary Pulse **2**
			D14	Auxiliary Pulse **3**
			D15	Auxiliary Pulse **4**
			D16	Logic programming output **1**
			D17	Logic Programming output **2**
			D18	Logic programming output **3**
			D19	Logic Programming output **4**
			D20	Logic programming output **5**
			D21	Logic programming output **6**
			D22	Belt **A**(ton bag scale)
			D23	Belt **B**(ton bag scale)
			D24	Slow Feed Manually
			D25	Discharging Manually
			D26	Serial read-only input 1
			D27	Serial read-only input 2
			D28	Serial read-only input 3
			D29	Serial read-only input 4
			D30	Serial read-only input 5
			D31	Serial Controllable output 1
0012 ~ 0013	**40013~40014**	Control Status **3**	**D0**	Serial Controllable output 2
			D1	Serial Controllable output 3
			D2	Serial Controllable output 4
			D3	Serial Controllable output 5
			D4	Done manually
			D5	Material level shielding
			D6~15	Reserved
0014-0015	**40015-40016**	Auto Clear alarm	**D0**	Target value is **0** and cannot be started
			D1	Weight overflow when starting
			D2	Zero out of range
			D3	Zero is unstable
			D4	Over/under alarm
			D5	Off discharge limit alarm
			D6	Reserved
			D7	Zero during run

			D8	Auto zero out of range
			D9	Auto zero unstable
			D10	Feeding door not closed in place alarm.
			D11	Discharge door not closed in place alarm
			D12	Ordinary motor feeding, slow-feeding door opening time setting cannot be 0
			D13	Ordinary motor feeding, middle-feeding door opening time setting can not be less than the slow feeding door opening time
			D14	Ordinary motor feeding, fast-feeding opening time can not be less than middle-feeding door opening time
			D15	Ordinary motor feeding, fast-feeding door opening time can not be less than slow-feeding door opening time
			D16	Stable timeout during runtime
0016 ~ 0019	**40017~ 40020**	Reserved		
0020-0021	**40021-40022**	Manually clear alarm	**D0**	Batch completed
			D1	Over/Under pause
			D2	Motor feeding door closing time out
			D3	Lock bag timeout
			D4	Unlock bag timeout
			D5	Discharging door closing timeout
			D6	Discharging door opening timeout
			D7	Reserved
			D8	Reserved
			D9	Mainboard attachment board communication failed
			D10	Fast feeding timeout
			D11	Middle feeding timeout
			D12	Slow feed timeout
			D13	Discharging timeout
			D14	Discharging vibration timeout
			D15	Decoupling incomplete alarm
			D16	Bracket up timeout alarm
			D17	Bracket down timeout alarm
			D18	Middle-feeding in-position alarm to the motor
			D19	Slow-feeding in-position alarm to the motor
			D20	The slider has returned to its original position and timed out
			D21	The clamp arm loosens the bag in place and exceeds the time limit
			D22	External input alarm
			D23	Bag drop alarm
0022 ~ 0025	**40023 ~ 40026**	Reserved		

0026-0027	**40027-40028**	Calibration Alarm	**1**: The maximum range is too small
			2: The maximum range is too large
			3: The zero voltage is too high
			4: The zero is too low
			5: The zero voltage is unstable
			6: The gain voltage is too large
			7: The gain voltage is too small
			8: The gain voltage is unstable
			9: Weight input error
			10: The resolution is too small after calibration (accuracy is not enough)
			11. Alarm for zero millivolt gain without weight
			12. Zero calibration successful
			13. Gain calibration successful
0028-0029	**40029-40030**	Alarm **3**	Reserved
Real-time parameter area; Read only			
0030-0031	**40031-40032**	Total accumulations weight high **6**-digits	
0032-0033	**40033-40034**	Total accumulations weight low **9**- digits	
0034-0035	**40035-40036**	Total accumulations number of packets	
0036-0037	**40037-40038**	Current recipe accumulations weight high 6- digits	
0038-0039	**40039-40040**	Current recipe accumulations weight low 9- digits	
0040-0041	**40041-40042**	Total number of packets for current recipe	
0042-0043	**40043-40044**	User accumulations weight high **6**- digits	
0044-0045	**40045-40046**	User accumulations weight low **9**- digits	
0046-0047	**40047-40048**	User accumulations number of packages	
0048	**40049**	Batch remaining	
0049	**40050**	Fast feeding time	
0050	**40051**	Middle feeding time	
0051	**40052**	Slow feeding time	
0052	**40053**	Waiting time	
0053	**40054**	Discharging time	
0054	**40055**	last package time (fast feeding time + middle feeding time + slow feeding time + waiting time + discharging time + delay time before feeding)	
0055-0056	**40056-40057**	Last package weight	
0057-0058	**40058-40059**	Packing speed	
0059-0060	**40060-40061**	Flow speed	
0061	**40062**	Delay time before feeding	
0062 ~ 0099	**40063 ~ 40100**	Reserved	
Calibration parameters (reserve 100~200) readable and writable registers			
0100	**40101**	Units	Initial value: 1; 0 - g, 1 - kg, 2 - t, 3: lb
0101	**40102**	Decimal point	Initial value :2; Optional: 0-0 digit; 1-1 digit; 1-2 digit s; 3-3 digits; 4-4 digits.
0102	**40103**	Division value	Initial value: 1; Optional: (1/2/5/10/20/50).

0103-0104	**40104-40105**	Maximum range	Initial value: 10000; Write range (maximum range ≤ mini division ×100000, and not greater than 999999)
0105-0106	**40106-40107**	Zero calibration	When writing 1, the current weight is regarded as zero, and the weight of the scale is stable before writing; Return the current zero millivolt when reading
0107-0108	**40108-40109**	Gain calibration with weight	Input standard weight (≤maximum range); Read: Current sensor relative zero millivolts
0109-0110	**40110-40111**	Gain calibration without weight (millivolts)	Write the number of millivolts corresponding to the gain weight, and the controller 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). .
0111-0112	**40112-40113**	Gain calibration without weight(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. Return 0000H when reading**.**
0113	**40114**	Sensor sensitivity	**3mV/V**
0114-0115	**40115-40116**	Controller sensor voltage	The multimeter measures the voltage between EX+ and EX-.
0116-0117	**40117-40118**	Maximum sensor range	Initial value: **10000**; Write range (maximum range ≤ mini division×**100000**, and not greater than 999999)
0118-0119	**40119-40120**	Feeding time	Initial value: **0.0s;** Write range: **0~9.9s**
0120-0121	**40121-40122**	Material Calibration	Write the weight value corresponding to the gain millivolts; Press "manual discharging" to record the current relative millivolts, and use the two to calibrate the gain when writing the register; **0000H** is returned on read**.**
0122 ~ 0199	**40123 ~ 40200**	Reserved	
Weighing parameters **(1)**			
0200	**40201**	Stable range	Initial value: **2;** Range :**0 to 99d**
0201	**40202**	Stable time	Initial value: **0.3**; Range: **0.1 to 9.9**.
0202	**40203**	Zero range	Initial value: **50**; Range: **1-99**
0203	**40204**	Zero tracking range	Initial value: **0**; Range: **0-9**
0204	**40205**	Zero tracking time	Initial value: **2.0**; Range: **0.1~99.9**.
0205	**40206**	A/D sampling rate	Initial value: **1;** Optional: 0:120 times/second; 1:240 times/second; 2:480 times/second; And 3:960 times/second
0206 ~ 0249	**40207 ~ 40250**	Reserved	
Weighing parameters (**2**)- Filtering related parameters			
0250	**40251**	Stop filter Level	Initial value: 7; Range: 0 to 9
0251	**40252**	Secondary filter switch	Initial value: **0**; **1**: on **0**: off

0252	**40253**	Dynamic filter switch	Initial value: **0**; **1**: On; **0**: Off
0253	**40254**	Feed filter level	Initial value: **4**; Range: **0 to 9**
0254	**40255**	Waiting filter level	Initial value: **7**; Range: **0 to 9**
0255	**40256**	Discharge filter level	Initial value: **1**; Range: **0 to 9**
0256 ~ 0299	**40257 ~ 40300**	Reserved	
Weighing parameters **(3)**			
0300	**40301**	power-on automatic zero	Initial value: **0**; **1**: ON; **0**: OFF
0301	**40302**	Automatic zero interval	Initial value: **0**; Range: **0-99** Clear the current weight after completing several packages in hopper mode.
0302	**40303**	Stable timeout during running	Initial value:**0**; Range: **0 to 99.9**
0303	**40304**	Waiting mode	Initial value: **0;** (Range: **0, 1**) **0:** waiting stable; **1:** delay waitting
0304	**40305**	Manual unloading accu-mulation	Initial value: **0**; **1**: On; **0**: Off
0305	**40306**	Waiting weight holding	Initial value: **0**; **1**: On; **0**: Off
0306	**40307**	Adaptive level	Initial value: **3**; Range: **1 to 5**
0307	**40308**	Adaptive switch	Initial value: **0**; Range: **0 to 2**
0308	**40309**	Manual bag release switch	Initial value: **0**; **1**: On; **0**: Off
0309	**40310**	Lifting bag run control switch	Initial value: **0**; **1**: On; **0**: Off
0310	**40311**	Lifting bag anti-logic switch	Initial value: **0**; **1**: On; **0**: Off
0311	**40312**	Tare check switch	Initial value: **0**; **1**: On; **0**: Off
0312	**40313**	Loose bag allowed in feed switch	Initial value: **0**; **1**: On; **0**: Off
0313 ~ 0349	**40314 ~ 40350**	Reserved	
System Maintenance - scale property parameters			
0350	**40351**	Scale construction	Initial value: 0; 0: hopper scale; 1: no hopper scale; 2: PLC mode; 3: ton package scale; 4: valve scale
0351	**40352**	Work mode	Initial value: 0; 0: single scale; 1: Interlock A scale; 2: Inter-lock B scale.
0352	**40353**	Packing mode	Initial value: 1; 0: gross weight packaging; 1: net weight packaging.
0353	**40354**	Bracket movement mode	Initial value: 0; 0- Pneumatic-Unlimited limit;1- Electric - Double limit; 2- Pneumatic - Double limit.
0354	**40355**	Feeding control method	Initial value: 1; 0: single feeding; 1: combined feeding.

0355	**40356**	Double scale loose bag mode	Initial value: 0; 0: Not loose bags simultaneously; 1: loose bag methord 1 simultaneously; 2: loose bag methord 2 simultaneously.
0356	**40357**	Bracket control switch	Initial value: 0; 0: Off; 1: On
0357 ~ 0499	**40358 ~ 40500**	Reserved	
Recipe parameters - Quantitative value parameters			
0500-0501	**40501-40502**	Recipe number	Initial value 1; Range: 1 to 20
0502-0503	**40503-40504**	Target value	Weight value written range: ≤ maximum range
0504-0505	**40505-40506**	Co-Fi remain	
0506-0507	**40507-40508**	Me-Fi remain	
0508-0509	**40509-40510**	Free Fall	
0510-0511	**40511-40512**	Zone Zero values	
0512-0513	**40513-40514**	Adaptive rating	Initial value: **3**; Range: **1** to **5**
0514-0515	**40515-40516**	Adaptive Switch	Initial value: **0**; Range: **0** to **2**
0516-0517	**40517-40518**	Adaptive update switch	Initial value: **0**; Range: **0** to **1**
0518 ~ 0549	**40519 ~ 40550**	Reserved	
Recipe parameters - time parameters			
0550	**40551**	Delay before feeding	Initial value: 0.5; Range: 0 to 99.9.
0551	**40552**	COMP.Inhibit.Time(Co-F)	Initial value: 0.9; Range: 0 to 99.9.
0552	**40553**	COMP.In-hibit.Time(Me-F)	Initial value: 0.9; Range: 0 to 99.9.
0553	**40554**	COMP.Inhibit.Time(Fi-F)	Initial value: 0.9; Range: 0 to 99.9.
0554	**40555**	Waiting hold time	Initial value: 0.5; Range: 0 to 99.9.
0555	**40556**	Delay after clamping or loosing bag	Initial value: 0.5; Range: 0 to 99.9.
0556	**40557**	Delay before bag re-lease	Initial value: 0.5; Range: 0 to 99.9.
0557	**40558**	Discharging delay	Initial value: 0.5; Range: 0 to 99.9.
0558 ~ 0599	**40559 ~ 40600**	reserve	
Recipe parameters - over and under parameters			
0600	**40601**	Over/under detection switch	Initial value: **0**; **1**: On; **0**: Off
0601	**40602**	Over/under pause switch	Initial value: **0**; **1**: On; **0**: Off
0602	**40603**	Over/under error alarm time	Initial value: **1.0;** Range: 0 to **99.9.**
0603-0604.	**40604-40605.**	Over value	Weight value written range: ≤ **maximum** range
0605-0606.	**40606-40607.**	Under value	
0607	**40608**	Under feed switch	Initial value: **0**; **1**: On; **0**: off.
0608	**40609**	Under maximum num-ber of refills	Initial value: **1**; Range: **1 to 99**.
0609	**40610**	Refill effective time	Initial value: **0.5**; Range: **0 to 99.9.**
0610	**40611**	Refill ineffective time	Initial value: **0.5**; Range: **0 to 99.9.**
Recipe Parameters - Drop correction parameters			

0611	**40612**	Drop correction switch	Initial value: **0**; **1**: On; **0**: off.
0612	**40613**	Number of drop corrections	Initial value: **1**; Range: **1 to 99**.
0613	**40614**	Drop correction range	Range: **2.0**; Range: **0 ~ 9.9** (unit: %)
0614	**40615**	Drop correction amplitude	Initial value: **1**; Optional: **0-100%** correction; **1-50%** correction; **2-25%** correction.
Recipe parameters – Slow-feeding littlely			
0615	**40616**	Slow feed littlely switch	Initial value: **0**; **1**: On; **0**: off.
0616	**40617**	Jogging effective time	Initial value**: 0.5**; Range: **0 to 9.9**
0617	**40618**	Jogging invalid time	Initial value**: 0.5**; Range: **0 to 9.9**
Recipe parameters - There are bucket scale parameters			
0618	**40619**	Number of single scale combinations	Initial value: **1;** Range: **0 to 99**.
0619	**40620**	Multi scale switch with bucket	Initial value: **0**; **1**: On; **0**: off.
0620~0621	**40621~40622**	Total target value	It will only work when the multi scale switch is turned on
0622 ~ 0649	**40623 ~ 40650**	Reserved	
Recipe parameters - no bucket scale parameters			
0650	**40651**	Delay start time for bag clamping again	Initial value: **4.0**; Range: **0 to 99.9**
0651	**40652**	Bag drop alarm time	Initial value: 0.0; Range: 0.0 to 99.9. (Unit s) (Applicable to no hopper scales and valve scales)
0652-0653	**40653-40654**	Bag drop alarm weight	0~ maximum range; (Applicable to no hopper scales and valve scales)
0654~0699	**40655~40700**	Reserved	
Recipe Parameters -PLC mode			
0700-0701	**40701-40702**	Over value	0~ maximum range
0702-0703	**40703-40704**	Under value	0~ maximum range
0704-0705	**40705-40706**	Upper limit value	0~ Maximum range
0706-0707	**40707-40708**	Lower limit value	0~ maximum range
0708 ~ 0749	**40709 ~ 40750**	Reserved	
Recipe Parameters - Ton packet scale mode			
0750	**40751**	Hanging bag delay time	Initial value**: 0.5**; Range: **0 to 99.9**.
0751	**40752**	Bracket automatic rising switch	Initial value: **0**; **0-** automatic rise, automatic fall; **1-** Automatic rise, manual fall; **2-** manual rise, automatic fall; **3-** Manual rise, manual fall.
0752	**40753**	Bracket up delay time	Initial value**: 5.0**; Range: **0 to 99.9**.
0753	**40754**	Bracket down delay time	Initial value**: 5.0**; Range: **0 to 99.9**
0754	**40755**	Measuring bracket uplink timeout time	Initial value**: 5.0**; Range: **0 to 99.9**.
0755	**40756**	Measuring bracket	Initial value**: 5.0**; Range: **0 to 99.9**.

		downlink timeout	
0756	**40757**	Blow time	Initial value**: 0.5**; Range: **0 to 99.9**.
0757	**40758**	Decoupling up switch	Initial value: **0**; **1**: On; **0**: Off
0758	**40759**	Incomplete decoupling alarm switch	Initial value: **0**; **1**: On; **0**: Off
0759	**40760**	Lifting bag reset delay	Initial value**: 0.0**; Range: **0 to 99.9**.
0760	**40761**	Blowing method	Initial value**: 0**; **0**: Blow before ascending delay **1**: Blow after ascending delay
0761	**40762**	Return valve mode selection	Initial value: 0; 0: Close the air valve after adding material 1: close the air return valve after loosening the bag
0762	**40763**	Delay before second upgo	Initial value**: 0.0**; Range: **0 to 99.9**
0763	**40764**	Secondary up time	Initial value**: 0.0**; Range: **0 to 99.9**
0764	**40765**	Second up pause time	Initial value**: 0.0**; Range: **0 to 99.9**
0765	**40766**	Conveyor reversal time	Initial value**: 0.0**; Range: **0 to 99.9**
0766	**40767**	Decoupling alarm weight value	0~ Maximum range
0767 ~ 0799	**40768 ~ 40800**	Reserved	
Recipe parameters - Valve port scale mode			
0800	**40801**	Bag lift delay time	Initial value**: 0.5**; Range: **0 to 99.9**
0801	**40802**	Bag lift effective time	Initial value**: 0.5**; Range: **0 to 99.9**
0802	**40803**	Bag push delay time	Initial value**: 0.5**; Range: **0 to 99.9**
0803	**40804**	Push bag effective time	Initial value**: 0.5**; Range: **0 to 99.9**
0804 ~ 0849	**40805 ~ 40850**	Reserved	
Recipe parameters - Quick mode			
0850	**40851**	Quick mode switch	Initial value: **0**; **1**: On; **0**: Off
0851	**40852**	Fast mode time	Initial value: **50**; Range: **0 to 1000**. (unit **ms**)
0852~0853	**40853~40854**	Fast Mode Weight	Fast mode cut-off weight value. Initial value: 0; Range: 0~maximum range.
0854	**40855**	Number of quick mode correct	Initial value: **5**; Range: **0 to 99**.
0855	**40856**	Fast Mode Stabilization time	Initial value: **100**; Range: **0 to 1000**. (unit ms)
0856~0999	**40857~41000**	Reserved	
Peripheral parameters - Bat (pier) bag parameters			
1000	**41001**	Patting mode	Initial value: **0**; Optional: **0**: No patting; **1:** Patting bag after setting the value; **2:** Patting bag in feeding; **3:** Patting bag after adding material and setting the value. can be set with hopper: **0,1;** can be set without hopper: **0~3.**
1001-1002.	**41002-41003.**	Patting bag starting weight	Initial value: **0**; Range: **0**~ maximum range.
1003	**41004**	Number of patting bag	Initial value: **0**; Range: **0 to 99**.

		in feed	Setting parameters for the number of bag shots during feeding.
1004	**41005**	Number of patting bag after waiting	Initial value: **4**; Range: **0 to 99**. Setting parameters for the number of bag shots after waiting
1005	**41006**	Delay before patting bag	Initial value: **0.5**; Range**: 0 to 99.9**
1006	**41007**	Patting bag effective time	Initial value: **0.5**; Range: **0 to 99.9**
1007	**41008**	Patting bag ineffective time	Initial value: **0.5**; Range**: 0 to 99.9**.
1008	**41009**	Extra patting bag effective time	Initial value: **0**; Range**: 0 to 99.9**.
1009 ~ 1019	**41010 ~ 41020**	Reserved	
Peripheral parameters - Coding parameters			
1020	**41021**	Code switch	Initial value: **0**; **1**: On; **0**: off.
1021	**41022**	Code start delay	Initial value: **0.5**; Range: **0 to 99.9**.
1022	**41023**	Code valid time	Initial value: **0.5**; Range: **0 to 99.9**.
1023	**41024**	Not Allow Fill/Discharge When Coding	Initial value: **0;** **0**: allow to start unloading output or feeding output during the coding process; **1**: the unloading output or charging output is not allowed to start during the coding process.
1024 ~ 1029	**41025 ~ 41030**	Reserved	
Peripheral parameters - parameters of the sewing machine			
1030	**41031**	Startup delay of sewing machine	Initial value: **0.5**; Range: **0 to 99.9**.
1031	**41032**	Sewing machine output effective time	Initial value: **4.0**; Range: **0 to 99.9**.
1032	**41033**	Cutter output effective time	Initial value: **0.5**; Range: **0 to 99.9**.
1033	**41034**	Delay before the sewing machine stops	Initial value: **0.5**; Range: **0.1 to 99.9**.
1034	**41035**	Cutter start delay	Initial value: **0.5**; Range: **0 to 99.9**.
1035	**41036**	Sewing switch	Initial value: **0**; **1**: On; **0**: Off
1036	**41037**	Sewing machine to shake time	Initial value: **0.3**; Range: **0 to 99.9**.
1037 ~ 1039	**41038 ~ 41040**	Reserved	
Peripheral parameters - Discharge vibration parameters			
1040	**41041**	Discharge Vibration Switch	Initial value: **0**; **0**: Off; **1**: on;
1041	**41042**	Discharging effective time	Initial value: **2.0**; Range: **0 to 9.9**.
1042	**41043**	Discharge vibration effective time	Initial value: **0.5**; Range: **0 to 9.9**.
1043	**41044**	Invalid time of discharge vibration	Initial value: **0.5**; Range: **0 to 9.9**.
1044	**41045**	discharging vibration times	Initial value: **10**; Range: **0 to 99.**
1045 ~ 1049	**41046 ~ 41050**	Reserved	
Peripheral parameters - Timeout alarm parameters			

1050	**41051**	Feeding/Discharging timeout alarm switch	Initial value: **0**; **1**: On; **0**: off.
1051	**41052**	Fast Feeding overtime time	Initial value: **5.0s;** Range: **0 to 99.9s**.
1052	**41053**	Middle Feeding overtime time	Initial value: **5.0s;** Range: **0 to 99.9s**.
1053	**41054**	Slow Feeding overtime time	Initial value: **5.0s;** Range: **0 to 99.9s**.
1054	**41055**	Discharging overtime time	Initial value: **5.0s;** Range: **0 to 99.9s**.
1055 ~ 1059	**41056 ~ 41060**	Reserved	
Peripheral parameters - auxiliary pulse parameters			
1060	**41061**	Auxiliary Pulse **1** Perform total time	Initial value: **0.0**; Range: **0 to 999.9s**.
1061	**41062**	Auxiliary Pulse **1** Effective time	Initial value: **10.0**; Range: **0 to 999.9s**.
1062	**41063**	Auxiliary Pulse **1** Ineffective time	Initial value: **10.0**; Range: **0 to 999.9s**.
1063	**41064**	Auxiliary pulse **2** Perform total time	Initial value: **0.0**; Range: **0 to 999.9s**.
1064	**41065**	Auxiliary pulse **2** Effective time	Initial value: **10.0**; Range: **0 to 999.9s**.
1065	**41066**	Auxiliary pulse **2** Ineffective time	Initial value: **10.0**; Range: **0 to 999.9s**.
1066	**41067**	Auxiliary pulse **3** Perform total time	Initial value: **0.0**; Range: **0 to 999.9min**.
1067	**41068**	Auxiliary pulse **3** Effective time	Initial value: **10.0**; Range: **0 to 999.9min**.
1068	**41069**	Auxiliary pulse **3** Ineffective time	Initial value: **10.0**; Range: **0 to 999.9min**.
1069	**41070**	Auxiliary pulse **4** Perform total time	Initial value: **0.0**; Range: **0 to 999.9min**.
1070	**41071**	Auxiliary pulse **4** Effective time	Initial value: **10.0**; Range: **0 to 999.9min**.
1071	**41072**	Auxiliary pulse **4** Ineffective time	Initial value: **10.0**; Range: **0 to 999.9min**.
1072	**41073**	Auxiliary Pulse **1** mode	Initial value**: 0;** **0 - pulse mode, 1 - level mode**
1073	**41074**	Auxiliary Pulse **2** mode	
1074	**41075**	Auxiliary Pulse **3** mode	
1075	**41076**	Auxiliary Pulse **4** mode	
1076	**41077**	Auxiliary pulse switch	Initial value: **0**; **1**: On; **0**: Off
1077 ~ 1079	**41078 ~ 41080**	Reserved	
Peripheral parameters - Conveyor			
1080	**41081**	Conveyor switch	Initial value: **0**; **1**: On; **0**: off.
1081	**41082**	Conveyor start delay	Initial value: **0.5**; Range: **0 to 99.9**.
1082	**41083**	Conveyer running time	Initial value: **4.0**; Range: **0 to 99.9**.
1083	**41084**	Conveyor **2/3** Max run time	Initial value: **30.0**; Range: **0 to 99.9**.
1084 ~ 1089	**41085 ~ 41090**	Reserved	
Communication Setup Parameters - Print parameters			

1090	**41091**	Automatic print switch	Initial value: **0**,1**:** On; 0**:** Off
1091	**41092**	Print format	Initial value: **0**; **0:** 24 column print; **1:**32 column print.
1092	**41093**	Print language	Initial value: **0**; **0**: Chinese; **1**: English.
1093	**41094**	Print feeding paper lines	Initial value: **3**; Range: **0 to 9.**
1094 ~ 1199	**41095 ~ 41200**	Reserved	
Logic Programming **1**			
1200	**41201**	Type	Initial value: **0**; Range **0 to 5**. **0**: Off **1**: Delay connected **2**: Delay disconnected **3**: Delay connected and delay disconnected **4**: Invalid - Valid jump edge trigger **5**: Valid - Invalid jump edge trigger
1201	**41202**	Trigger Signal	Initial value: **0**; Range: **0 to 64**. Optional customed trigger input port, fixed IO module: input port **1~12**, IO module output definition, weight value trigger.
1202	**41203**	Trigger input signal port	Initial value: **0**; Range **0 to 12**. Select the IO module input port 0 to 12 corresponding to the function signal**,** and the input port -0 means that the function is not defined.
1203	**41204**	Output signal port	Initial value: **0**; Range **0 to 16**. 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.
1204	**41205**	Delay turn-on time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is valid, the logic output signal is valid only after the delay time.
1205	**41206**	Delayed disconnect time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is invalid, the logic output signal will be invalid after the delay time.
1206	**41207**	Signal output valid time	Initial value: **0**; Range: **0 to** 99.9**.** The duration of the logical output signal after the output is valid, which becomes invalid after the end of the time.
1207-1208	**41208-41209**	Threshold weight	Initial value: **0**; Range: **0** to **999999** When the trigger signal selects "Threshold weight", the current weight is compared with this value
1209 ~ 1219	**41210 ~ 41220**	Reserved	
Logic Programming **2**			

1220	**41221**	Type	Initial value: 0; Range 0 to 5. **0**: Off **1**: Delay connected **2**: Delay disconnected **3**: Delay connected and delay disconnected **4**: Invalid - Valid jump edge trigger **5**: Valid - Invalid jump edge trigger
1221	**41222**	Trigger Signal	Initial value: **0**; Range: **0 to 64**. Optional custom trigger input port, fixed switch quantity input port **1~12,** IO module's output definition, weight value trigger.
1222	**41223**	Trigger input signal port	Initial value: **0**; Range **0 to 12**. Select the input ports 0 to 12 corresponding to the function signal. The input port -0 means that the function is not defined.
1223	**41224**	Output signal port	Initial value: **0**; Range **0 to 16**. Select the output port 0 to 16 corresponding to the function signal**,** and the output port -0 means that the function is not defined.
1224	**41225**	Delay connected time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is valid, the logic output signal is valid only after the delay time.
1225	**41226**	Delay disconnected time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is invalid, the logic output signal will be invalid after the delay time.
1226	**41227**	Signal output valid time	Initial value: **0**; Range: **0 to** 99.9**.** The duration of the logical output signal after the output is valid, which becomes invalid after the end of the time.
1227-1228	**41228-41229**	Threshold Weight	Initial value: **0**; Range: **0** to **999999** When the trigger signal selects "Threshold weight", the current weight is compared with this value
1229 ~ 1239	**41230 ~ 41240**	Reserved	
Logic Programming **3**			
1240	**41241**	Type	Initial value: **0**; Range **0** to **5**. **0**: Off **1**: Delay connected **2**: Delay disconnected **3**: Delay connected and delay disconnected **4**: Invalid - Valid jump edge trigger **5**: Valid - Invalid jump edge trigger
1241	**41242**	Trigger Signal	Initial value: **0**; Range: **0 to 64**. Optional custom trigger input port,

			fixed switch quantity input port **1~12,** switch quantity output definition, weight value trigger.
1242	**41243**	Trigger input signal port	Initial value: **0**; Range **0 to 12**. Select the input port 0 to 12 corresponding to the function signal**,** and the input port -0 means that the function is not defined.
1243	**41244**	Output signal port	Initial value: **0**; Range **0 to 16**. Select the output port 0 to 16 corresponding to the function signal**,** and the output port -0 means that the function is not defined.
1244	**41245**	Delay connected time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is valid, the logic output signal is valid only after the delay time.
1245	**41246**	Delayed disconnected time	Initial value: **0**; Range: **0 to** 99.9**.** (After the trigger signal is invalid, the logic output signal is invalid after the delay time.
1246	**41247**	Signal output valid time	Initial value: **0**; Range: **0 to** 99.9**.** The duration of the logical output signal after the output is valid, which becomes invalid after the end of the time.
1247-1248	**41248-41249**	Threshold Weight	Initial value: **0**; Range: **0** to **999999**. When the trigger signal selects "Threshold weight", the current weight is compared with this value
1249 ~ 1259	**41250 ~ 41260**	Reserved	
Logic Programming **4**			
1260	**41261**	Type	Initial value: **0**; Range **0** to **5**. **0**: Off **1**: Delay connected **2**: Delay disconnected **3**: delay connected and delay disconnected **4**: Invalid - Valid jump edge trigger **5**: Valid - Invalid jump edge trigger
1261	**41262**	Trigger Signal	Initial value: **0**; Range: **0 to 64**. Optional custom trigger input port, fixed input port **1~12,** output definition, weight value trigger.
1262	**41263**	Trigger input signal port	Initial value: **0**; Range **0 to 12**. Select the input port 0 to 12 corresponding to the function signal**,** and the input port -0 means that the function is not defined.
1263	**41264**	Output signal port	Initial value: **0**; Range **0 to 16**. Select the output port 0 to 16 corresponding to the function signal**,** and the output port -0 means that the function is

			not defined.
1264	**41265**	Delay turn-on time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is valid, the logic output signal is valid only after the delay time.
1265	**41266**	Delayed disconnect time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is invalid, the logic output signal will be invalid after the delay time.
1266	**41267**	Signal output valid time	Initial value: **0**; Range: **0 to** 99.9**.** The duration of the logical output signal after the output is valid, which becomes invalid after the end of the time.
1267-1268	**41268-41269**	Threshold weight	Initial value: **0,** range: **0 to 999999.** When the trigger signal selects "threshold weight", the current weight is compared with the value
1269 ~ 1279	**41270 ~ 41280**	Reserved	
Logic Programming **5**			
1280	**41281**	Type	Initial value: **0**; Range **0 to 5**. **0**: Off **1**: Delay connected **2**: Delay disconnected **3**: Delay connected and delay disconnected **4**: Invalid - Valid jump edge trigger **5**: Valid - invalid jump edge trigger
1281	**41282**	Trigger Signal	Initial value: **0**; Range: **0 to 64**. Optional custom trigger input port, fixed input port **1~12,** output definition, weight value trigger.
1282	**41283**	Trigger input signal port	Initial value: **0**; Range **0 to 12**. Select the input port 0 to 12 corresponding to the function signal**,** and the input port -0 means that the function is not defined.
1283	**41284**	Output signal port	Initial value: **0**; Range **0 to 16**. Select the output port 0 to 16 corresponding to the function signal**,** and the output port -0 means that the function is not defined.
1284	**41285**	Delay connected time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is valid, the logic output signal is valid only after the delay time.
1285	**41286**	Delay disconnect time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is invalid, the logic output signal will be invalid after the delay time.
1286	**41287**	Signal output valid time	Initial value: **0**; Range: **0 to** 99.9**.** The duration of the logical output signal after

			the output is valid, which becomes invalid after the end of the time.
1287-1288	**41288-41289**	Threshold Weight	Initial value: **0**; Range: **0**~ maximum range. When the trigger signal selects Threshold Weight, the current weight is compared with this value
1289 ~ 1299	**41290 ~ 41300**	Reserved	
Logic Programming **6**			
1300	**41301**	Type	Initial value: **0**; Range **0** to **5**. **0**: Off **1**: Delay connected **2**: Delay disconnected **3**: Delay connected and delay disconnected **4**: Invalid - Valid jump edge trigger **5**: Valid - Invalid jump edge trigger
1301	**41302**	Trigger Signal	Initial value: **0**; Range: **0 to 64**. Optional custom trigger input port, fixed input port **1~12,** output definition, weight value trigger.
1302	**41303**	Trigger input signal port	Initial value: **0**; Range **0 to 12**. Select the input port 0 to 12 corresponding to the function signal**,** and the input port -0 means that the function is not defined.
1303	**41304**	Output signal port	Initial value: **0**; Range **0 to 16**. Select the output port **0** to **16** corresponding to the function signal, and the output port **-0** means that the function is not defined.
1304	**41305**	Delayed connected time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is valid, the logic output signal is valid only after the delay time.
1305	**41306**	Delay disconnected time	Initial value: **0**; Range: **0 to** 99.9**.** After the trigger signal is invalid, the logic output signal will be invalid after the delay time.
1306	**41307**	Signal output valid time	Initial value: **0**; Range: **0 to** 99.9**.** The duration of the logical output signal after the output is valid, which becomes invalid after the end of the time.
1307-1308	**41308-41309**	Threshold Weight	Initial value: **0**; Range: **0** to **999999**. When the trigger signal selects "Threshold weight", the current weight is compared with this value
1309 ~ 1399	**41310 ~ 41400**	Reserved	
Motor parameters - feed mode			
1400	**41401**	Number of the power unit used in the current formula	Initial value: **0**; Range: **0 to 4**.
1401	**41402**	Feed mode	Initial value**: 0**;

			Optional: **0**: pneumatic feeding; **1**: stepper motor feeding; **2**: ordinary motor feeding.
1402	**41403**	The feed door close overtime	Initial value: **4.0**; Range: **0 to 99.9**
1403	**41404**	Feed door in place signal type	Initial value: **0**; Optional: **0**: In place when the signal is valid; **1**: In place when the signal is invalid.
1404	**41405**	Motor number	Initial value: **0,** range: **0 to 4.**
1405	**41406**	Feeding frequency	Initial value: **12000**, range: **0~50000Hz**
1406-1407	**41407-41408**	Slow feedpulse number	Initial value: **1800**; Range: **1 to 60,000.**
1408-1409	**41409-41410**	Middle feed pulse number	Initial value: **4300**; Range: **1 to 60,000.**
1410-1411	**41411-41412**	Fast feed pulse Number	Initial value: **7750**; Range: **1 to 60,000.**
1412	**41413**	Feed door opening direction signal status	Initial value: **0**; **0**: open the door when the signal is valid; **1**: the direction of opening the door when the signal is invalid.
1413	**41414**	Feed motor start frequency	Initial value: **2000**; Range: **0 to 50000Hz**
1414	**41415**	Feed motor acceleration time	Initial value: **200**; Range: **0 to 9999**
1415	**41416**	Feed motor deceleration time	Initial value: **50**; Range: **0 to 9999.**
1416	**41417**	Fast feed time	Initial value: **0.80**; Range: **0 to 99.99.**
1417	**41418**	Feed time	Initial value: **0.40**; Range: **0 to 99.99.**
1418	**41419**	Slow feed time	Initial value: **0.20**; Range: **0 to 99.99.**
1419	**41420**	Clamp bag mode	Initial value: **0**; Optional: **0**: pneumatic clamp/loose bag; **1**: stepper motor clamp/loose bag; **2**: motor double limit clamp/loose bag; **3**: motor single limit clip loose bag.
1420	**41421**	Loose bag process timeout	Initial value: **3.0**; Range: **0 to 99.9.**
1421	**41422**	Bagging process timeout	Initial value: **3.0;** Range: **0 to 99.9.**
1422	**41423**	Loose bag in place signal type	Initial value: **0;** **0**: in place when the signal is valid; **1**: in place when signal is invalid.
1423	**41424**	Clamp bagfrequency	Initial value: **30000**; Range:**0 to 50,000Hz**
1424	**41425**	Loose bag frequency	Initial value**:20000;** Range**:0 to 50,000Hz**
1425-1426.	**41426-41427.**	Number of clamping/loosing pulses	Initial value: **12000**; Range: **1 to 60,000.**
1427	**41428**	Clamp bag direction signal status	Initial value: **0**; **0**: the direction of pocket when the signal is invalid; **1**: when the signal is effective, it is the direction of the pocket.
1428	**41429**	Clamp bag motor starting	Initial value: **2000;** Range: **0 to**

		frequency	**50000Hz**
1429	**41430**	Clamp bag motor acceleration time	Initial value: **200**; Range: **0 to 9999**
1430	**41431**	Clamp bag motor deceleration time	Initial value: **50**; Range: **0 to 9999**
1431	**41432**	Clamp bag bag effective time	Initial value: **0.5,** range: **0~99.99**
1432	**41433**	Discharge mode	Initial value: pneumatic mode; **0,** pneumatic mode; **1,** stepping motor unloading; **2,** motor single limit unloading; **3**, motor double limit discharge; **4,** the motor one-way rotation one week unloading.
1433	**41434**	Discharging door closing time	Initial value: **3.0**; Range: **0 to 99.9**
1434	**41435**	Discharging door opening timeout	Initial value: **3.0**; Range: **0 to 99.9**
1435	**41436**	Unloading position signal type	Initial value: **0**; **0**: In position when the signal is active. **1**: In position when signal is not effective.
1436	**41437**	Unload real time detection switch	Initial value: **0**; **0**: Off; **1**: on.
1437	**41438**	Discharge opening frequency	Initial value: **30000**; Range: **0 to 50000Hz**
1438	**41439**	Discharge closing frequency	Initial value: **20000**; Range: **0 to 50,000Hz**
1439-1440	**41440-41441**	Number of discharge pulses	Initial value: **12000**; Range: **1 to 60,000.**
1441	**41442**	Discharge direction signal status	Initial value: **0**; **0**: the opening direction when the signal is invalid. **1**: The direction of opening the door when the signal is valid.
1442	**41443**	Discharge motor starting frequency	Initial value: **2000**; Range: **0 to 50,000Hz**
1443	**41444**	Discharge motor acceleration time	Initial value: **200**; Range: **0 to 9999**
1444	**41445**	Discharge motor deceleration time	Initial value: **50;** Range: **0 to 9999**
1445	**41446**	Discharge door output time	Initial value: **1.00;** Range: **0 to 99.99**
1446	**41447**	Feed motor power back to zero frequency	Initial value: **20000**; Range: **0** to **50000 Hz**
1447	**41448**	Pinch loose bag motor power back to zero frequency	Initial value: **20000**; Range: **0** to **50000 Hz**
1448	**41449**	The discharge motor is powered back to the original zero	Initial value: **20000**; Range: **0** to **50000 Hz**

		frequency	
1449	**41450**	Feeding does not use the in place signal	Initial value: **0** **0:** Feed using in place signal **1:** Feed does not use in place signal
1450	**41451**	Pinch loose bags do not use a position signal	Initial value: **0** **0:** Pinch loose bag using in place signal **1:** Pinch loose bag does not use position signal
1451	**41452**	Do not use position signals for unloading doors	Initial value: **0** **0:** Unload the door using the position signal **1:** The unloading door does not use the position signal
1452-1453	**41453-41454**	Feed off pulse count	Initial value: 100; Range: 1 to 60,000.
1454-1455	**41455-41456**	Number of loose pocket pulses	Initial value: 100; Range: 1 to 60,000.
1456-1457	**41457-41458**	Number of discharge off pulses	Initial value: 100; Range: 1 to 60,000.
1458	**41459**	In place alarm switch during feeding	Initial value: 0: Off; 0: Off: No in place signal detected during feeding process, 1: On: In place signal detected during feeding process
1459-1499	**41460-41500**	Reserved	
1500	**41501**	Traction slider pattern	Fixed as stepper motor slider after activation
1501	**41502**	Slider moves back to bit timeout	Initial value: **5.0**; Range: **0 to 99.9.** (Unit **s**)
1502	**41503**	Slider in place signal type	Initial value: **0;** Optional: **0**: In place when the signal is valid; **1**: in place when signal is not effective.
1503	**41504**	Slider move out frequency	Initial value: **30000**; Range: **1 to 50000Hz.**
1504	**41505**	Slider move back to frequency	Initial value **:20000;** Range **:1 to 50000Hz.**
1505-1506	**41506-41507**	Slide out pulse count	Initial value: **12000**; Range: **1 to 60,000.**
1507	**41508**	Slider direction signal status	Initial value: **0**; Optional: **0**: Positive direction when the signal is invalid; **1**: reverse direction when the signal is valid.
1508	**41509**	Slider motor start frequency	Initial value: **2000;** Range: **0 to 50000Hz.** (This value cannot be greater than the pocket frequency)
1509	**41510**	Slider motor acceleration time	Initial value: **200**; Range: **0 to 9999.** (Unit: **ms**)
1510	**41511**	Slider motor deceleration time	Initial value: **50**; Range: **0 to 9999** (in **ms**).

1511	**41512**	Slider motor power back to zero frequency	Initial value: **20000**; Range: **1 to 50000(Hz).**
1512	**41513**	Arm clip pocket pattern	Initial value: pneumatic mode; **0,** pneumatic mode; **1**. Stepper motor clip arm clip bag;
1513	**41514**	Clamping arm in position timeout	Initial value: **3.0**; Range: **0 to 99.9.** (Unit **s**)
1514	**41515**	Clamp arm /bag in place signal type	Initial value: **0**; Optional: **0**, in position when the signal is valid. **1**. In place when the signal is invalid.
1515	**41516**	Clamp arm/bag frequency	Initial value: **30000**; Range: **1 to 50000(Hz).**
1516	**41517**	Clamp arm loose bag frequency	Initial value: **20000**; Range: **1 to 50000(Hz).**
1517-1518.	**41518-41519.**	Number of clamp arm/bag pulses	Initial value: **12000**; Range: **1 to 60,000.**
1519	**41520**	Clamp arm/bag direction signal status	Initial value: **0**; Optional: **0**: Pocket direction when signal is invalid. **1**: Loose bag direction when signal is valid.
1520	**41521**	Clamping arm /bag motor starting frequency	Initial value: **2000**; Range: **1 to 50000(Hz).**
1521	**41522**	Clamp arm/bag motor acceleration time	Initial value: **200**; Range: **0 to 9999.** (Unit**: ms**)
1522	**41523**	Clamp arm/bag motor deceleration time	Initial value: **50;** Range: **0 to 9999.** (Unit**: ms**)
1523	**41524**	Clamp arm/bag motor is powered back to original zero frequency	Initial value: **20000**; Range: **1 to 50000(Hz).**
1524	**41525**	Tractor mode	Initial value: 0: Off; Optional: 0: off. 1: built-in tractor
1525	**41526**	Delay before slider is removed	Default: 0, range: 0.0 to 99.9. (Unit **s**)
1526	**41527**	Delay before slider moves back	Default: 0, range: 0.0 to 99.9. (Unit **s**)
1527	**41528**	Delay before arm clamping bag	Default: 0, range: 0.0 to 99.9. (Unit **s**)
1528	**41529**	Clamp pocket hold time	Default value: 0 The value ranges from 0.0 to 99.9. (Unit **s**)
1529	**41530**	Delay before pouching	Default: 0, range: 0.0 to 99.9. (Unit **s**)
1530	**41531**	Delay before closing stretch bag	Default: 0, range: 0.0 to 99.9. (Unit **s**)
1531 ~ 1599	**41532 ~ 41600**	Reserved	
Communication Setting parameters - Serial port **RS485** parameter			
1600	**41601**	Slave number	Initial value: **1**; **1 to 99 Optional**.

1601	**41602**	Communication method	**0**: **Mobus-RTU**; **1**: print; **2**: **Cont** continuous mode; **3**: Md-SP protocol; 4:**Re-Cont.**
1602	**41603**	Baud rate	0:9600**;**1:119200**;**2:38400**;**3:57600**;** 4:115200**.**
1603	**41604**	Data format	0:8-E-1**;**1:8-N-1**;**2:7-E-1**;**3:7-N-1**.**
1604	**41605**	High-low words	Initial value: **0:** **0:** high word before low word after; **1:** low word in front of high word after.
Communication setting parameters - serial **RS232** parameters			
1605	**41606**	Slave number	Initial value: **1**; **1 to 99 Optional**.
1606	**41607**	Method of communication	**0**: **Mo.bus-RTU**; **1**: print; **2**: **Cont** continuous mode; **3**: Md-SP protocol; 4:**Re-Cont.**
1607	**41608**	Baud rate	0:9600**;** 1:119200**;** 2:38400**;** 3:57600**;** 4:115200**.**
1608	**41609**	Data Format	0:8-E-1**;** 1:8-N-1**;** 2:7-E-1**;** 3:7-N-1**.**
1609	**41610**	High-low words	Initial value: **0:** **0:** high word before low word after; **1:** low word in front of high word after.
Communication setting parameters - Network port parameters			
1610	**41611**	High and low bytes	Initial value: **0:** **0:** high word before low word after; **1:** low word in front of high word after.
1611	**41612**	Port number	Initial value: **502;** Range: **1 to 65535.**
1612	**41613**	IP	Initial value: **192.168.101.246;** Range: **0 to 255.**
1613	**41614**		
1614	**41615**		
1615	**41616**		
1616 ~ 1699	**41617 ~ 41700**	reserve	
IO Module Customed parameters			
1700	**41701**	Input port 1 Defined	Write function corresponding numeric value. If the input port **3** is defined as running, **1** should be written in the **41703** address (the digital function code please refer to the output and input definition code of the IO chapter 3.7.1). Read: Return the current IO Module custom status
1701	**41702**	Input port 2 Defined	
1702	**41703**	Input port 3 Defined	
1703	**41704**	Input port 4 Defined	
1704	**41705**	Input port 5 Defined	
1705	**41706**	Input port 6 Defined	
1706	**41707**	Input port 7 Defined	
1707	**41708**	Input port 8 Defined	
1708	**41709**	Input port 9 Defined	
1709	**41710**	Input port 10 Defined	
1710	**41711**	Input port 11 Defined	
1711	**41712**	Input port 12 Defined	
1712	**41713**	Output port 1 Defined	Write function corresponding value. If the output port **3** is defined as run, **1**
1713	**41714**	Output port 2 Defined	

1714	**41715**	Output port 3 Defined	should be written in address **41715 (**for the numeric function code, please refer to the output and input definition code of the IO chapter 3.7.1)
1715	**41716**	Output port 4 Defined	
1716	**41717**	Output port 5 Defined	
1717	**41718**	Output port 6 Defined	
1718	**41719**	Output port 7 Defined	
1719	**41720**	Output port 8 Defined	
1720	**41721**	Output port 9 Defined	
1721	**41722**	Output port 10 Defined	
1722	**41723**	Output port 11 Defined	
1723	**41724**	Output port 12 Defined	
1724	**41725**	Output port 13 Defined	
1725	**41726**	Output port 14 Defined	
1726	**41727**	Output port 15 Defined	
1727	**41728**	Output port 16 Defined	
1728	**41729**	Start/end IO test	Write: (can only be written in the stopped state) Write **1:** Start the IO test. Write **0**: Exits the IO test state
1729	**41730**	Input test	Write: Write is not allowed Read: Enter ports **IN1 to 12** from low to high. **1** indicates that the input is valid, **0** indicates that the input is invalid.
1730-1731	**41731-41732**	Output test	Write: The IO test can be written when the IO is turned on, from low to high corresponding ports **OUT1~16** output. **1**: The output is valid. **0**: the output is invalid.
1732 ~ 1799	**41733 ~ 41800**	Reserved	
Other parameter Settings			
1800	**41801**	Print total accumulations	Read as **0;** Write **1** to print total accumulations.
1801	**41802**	Print recipe Accumulations	Read to **0;** Write **100**, print current recipe accumulations; Write **1-20**, print the corresponding recipe accumulations; Write **101,** and print all recipes for accumulations.
1802	**41803**	Print user accumulations	Read as **0;** Write **100**, print current user accumulations; Write **0-9**, print the corresponding user accumulations; Write **101** to print all users accumulations.

1803	**41804**	factory data reset.	**8800** reset All parameters (including school scales); **8801** reset All parameters (excluding school scales); **8802** reset formula parameters; **8803** reset system and communication; **8804** reset peripheral parameters; **8805** reset motor parameters; **8806** reset calibration; **8807** reset IO parameters; **8808** reset logic programming; **8809** reset communication parameters.
1804	**41805**	Parameter backup	Read: **0**: no backup parameter currently; **1**: backup parameters are currently available. Write: Write **9900** to perform parameter backup; Write **9901** to perform recovery backup; Write **9902** to perform delete backup.
1805-1806	**41806-41807**	Backup date	Read Only
1807-1808	**41808-41809**	Backup time	
1809	**41810**	year	**0-99**
1810	**41811**	month	**1-12**
1811	**41812**	day	**1-31**
1812	**41813**	hour	**0-23**
1813	**41814**	minute	**0-59**
1814	**41815**	second	**0-59**
1815	**41816**	Clear total accumulation	Write **1** Clear total accumulations.
1816	**41817**	Clear recipe Accumulations	Write **1-20** to clear the corresponding accumulations data Write **100** to clear the current recipe accumulations; Write **101** to clear all recipe accumulations.
1817	**41818**	Clear user accumulations	Read as **0.** Write **0-9** to clear the corresponding user acaccumulations; Write **100** to clear the current user accumulations; Write **101** to clear all user accumulations.
1818	**41819**	user number	Read the current user number, read only.
1819-1949	**41820-41950**	Reserved	
Batch set			
1950	**41951**	Batch	Initial value: **0**; Range: **0 to 9999.**
1951	**41952**	Remaining batch	Read Only

1952 ~ 1999	**41953 ~ 42000**	Reserved	
Recipe target value			
2000-2001	**42001-42002**	Recipe **1** Target value	Initial value**: 0.**
2002-2003	**42003-42004**	Recipe **2** Target value	Initial value**: 0.**
...	**...**	**...**	Initial value**: 0.**
2038-2039	**42039-42040**	Formula **20** target value	Initial value**: 0.**
Accumulations weight (Read only)			
2040-2041	**42041-42042**	Total accumulations weight **6** digits higher	
2042-2043	**42043-42044**	Total accumulations weight low **9** digits	
2044-2045	**42045-42046**	Total accumulations packet count	
2046-2047	**42047-42048**	Recipe **1** Accumulate weight high **6** digits	
2048-2049	**42049-42050**	Recipe **1** Accumulate weight low **9** digits	
2050-2051	**42051-42052**	Recipe **1** Accumulate times	
		...	
2160-2161	**42161-42162**	Recipe **20** Accumulations weight high **6** digits	
2162-2163	**42163-42164**	Recipe **20** Accumulations weight low **9** digits	
2164-2165	**42165-42166**	Recipe **20** Accumulations times	
User accumulations weight and times (Read only)			
2166-2167	**42167-42168**	User **0** Accumulations weight high **6** digits	
2168-2169	**42169-42170**	User **0** Accumulations weight low **9** digits	
2170-2171	**42171-42172**	User **0** Accumulations count	
2172-2173	**42173-42174**	User **1** Accumulations weight high **6** digits	
2174-2175	**42175-42176**	User **1** Accumulations weight low **9** digits	
2176-2177	**42177-42178**	User **1** Accumulations count	
2178-2179	**42179-42180**	User **2** Accumulations weight high **6** digits	
2180-2181	**42181-42182**	User **2** Accumulations weight low **9** digits	
2182-2183	**42183-42184**	User **2** Accumulations times	
2184-2185	**42185-42186**	User **3** Accumulations weight high **6** digits	
2186-2187	**42187-42188**	User **3** Accumulations weight low **9** digits	
2188-2189	**42189-42190**	User **3** Accumulate counts	
2190-2191	**42191-42192**	User **4** Accumulations weight high **6** digits	
2192-2193	**42193-42194**	User **4** Accumulations weight low **9** digits	
2194-2195	**42195-42196**	User **4** Accumulate times	
2196-2197	**42197-42198**	User **5** Accumulated weight high **6** digits	
2198-2199	**42199-42200**	User **5** Accumulations weight low **9** digits	
2200-2201	**42201-42202**	User **5** Accumulations times	
2202-2203	**42203-42204**	User **6** Accumulations weight high **6** digits	
2204-2205	**42205-42206**	User **6** Accumulations weight low **9** digits	
2206-2207	**42207-42208**	User **6** Accumulations times	
22082209	**42209-42210**	User **7** Accumulations weight high **6** digits	
2210-2211	**42211-42212**	User **7** Accumulations weight low **9** digits	
2212-2213	**42213-42214**	User **7** Accumulations times	
2214-2215	**42215-42216**	User **8** Accumulations weight high **6** digits	
2216-2217	**42217-42218**	User **8** Accumulations weight low **9** digits	
2218-2219	**42219-42220**	User **8** Accumulations times	

2220-2221	**42221-42222**	User **9** Accumulations weight high **6** digits	
2222-2223	**42223-42224**	User **9** Accumulations weight low **9** digits	
2224-2225	**42225-42226**	User **9** Accumulations times	
2226 ~ 2299	**42227 ~ 42300**	Reserved	
Compile information			
9000-9001	**49001-49002**	Background version Number	Example**: 010000**
9002-9003	**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 ~ 9099	**49009 ~ 49100**	Reserved	
Coil address			
0	**00001**	Start	The contents are readable and writable coils Writing **ON** is valid Read as **0**
1	**00002**	E-Stop	
2	**00003**	Slow Stop	
3	**00004**	Pause	
4	**00005**	Zero	
5	**00006**	Clear Alarm	
6	**00007**	Clamp/Loose bags	
7	**00008**	Choose the recipe	
8	**00009**	Manual slow feeding	
9	**00010**	Manual fast feeding	
10	**00011**	Manual discharging	
11	**00012**	Manual clearing materials	
12	**00013**	Lifting bag	
13	**00014**	Sewing machine started	
14	**00015**	Sewing machine stop emergencily	
15	**00016**	Auxiliary Pulse Function **1**	
16	**00017**	Auxiliary Pulse Function **2**	
17	**00018**	Auxiliary Pulse Function **3**	
18	**00019**	Auxiliary Pulse Function **4**	
19	**00020**	Clear remains' information	
20	**00021**	Mid-feed manually	This address can only be written to **1** Read **1** is valid and **0** is invalid
21	**00022**	Manual feeding (for material calibration only)	This address can only be written to **1** Read **1** is valid and **0** is invalid
22	**00023**	Manual discharge (for material calibration only)	This address can only be written to **1** Read **1** is valid and **0** is invalid
23	**00024**	Reserved	
24	**00025**	Serial Controllable output 1	
25	**00026**	Serial Controllable output 2	
26	**00027**	Serial Controllable output 3	
27	**00028**	Serial Controllable output 4	
28	**00029**	Serial Controllable output 5	
29	**00030**	Material level shielding	

30	**00031**	Done manually	
…	**…**	Reserved	
80	**00081**	Clear current user accumulation	Write **ON** valid Read as **0**
81	**00082**	Clear all user acaccumulations	
82	**00083**	Clear current recipe accumulations	
83	**00084**	Clear all recipe acaccumulations	
84	**00085**	Clear total accumulations	
…	**…**	Reserved	
100	**00101**	Reset all parameters	Write ON to execute the corresponding reset operation Read as 0; Write while running but not effective, need to stop running write valid
101	**00102**	Calibration parameters reset	
102	**00103**	Weight parameter reset	
103	**00104**	Recipe parameters reset	
104	**00105**	Peripheral parameters reset	
105	**00106**	The IO parameter reset	
106	**00107**	Motor parameter reset	
107	**00108**	Logic programming parameter reset	
108	**00109**	Perform parameter backup	
109	**00110**	Restore backup parameters	
110	**00111**	Delete Backup parameters	Write ON to delete backup parameters. Read: 1：Backup parameters; 0：No backup parameter.
111	**00112**	Communication parameter reset	Write **ON** valid; Read as **0** Write while running but not effective, need to stop running write valid
Coil IO Module Parameters' test			
150	**00151**	IO test switch: Write ON to turn on the test switch, read: 0 to turn off the test switch	
151	**00152**	Input port **1**	Does not take effect when written When the input port is valid, the corresponding address is read as 1 When the input port is invalid, the corresponding address is read as 0
152	**00153**	Input port **2**	
153	**00154**	Input port **3**	
154	**00155**	Input port **4**	
155	**00156**	Input port **5**	
156	**00157**	Input port **6**	
157	**00158**	Input port **7**	
158	**00159**	Input port **8**	
159	**00160**	Input port **9**	
160	**00161**	Input port **10**	
161	**00162**	Input port **11**	
162	**00163**	Input port **12**	
163	**00164**	Output port **1**	Write **ON** valid (when writing **ON**, the output port corresponding to the address should be valid)
164	**00165**	Output Port **2**	
165	**00166**	Output port **3**	
166	**00167**	Output Port **4**	
167	**00168**	Output Port **5**	

168	**00169**	Output port **6**
169	**00170**	Output port **7**
170	**00171**	Output port **8**
171	**00172**	Output port **9**
172	**00173**	Output port **10**
173	**00174**	Output port **11**
174	**00175**	Output port **12**
175	**00176**	Output port **13**
176	**00177**	Output port **14**
177	**00178**	Output port **15**
178	**00179**	Output port **16**

5.4 Continuons mode data frame format

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

among them:

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.

5.5 Re-Cont 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 host computer

Return data frame format description:

Status	,	Gross/Net weight	,	+/-	Show values	Units	CR	LF
2-bit	**2C**	**47 53/4E 54**	**2C**	**2B/2D**	**7-bit**	**2** bits	**0D**	**0A**

Where:

Status -- **2** bytes, **OL**(overflow):**4FH 4CH; ST**(stable):**53H 54H; US**(unstable):**55H 53H**

Display value **- 7** bytes, including decimal point, high space if no decimal point

Unit **-- 2** bytes**, g :20 67; kg :6B 67; t :20 74; lb :6C 62**

For example:

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

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

You can see that the current status is stable, the data value is positive, and the displayed value is **11.120kg.**

5.6 Md-SP protocol

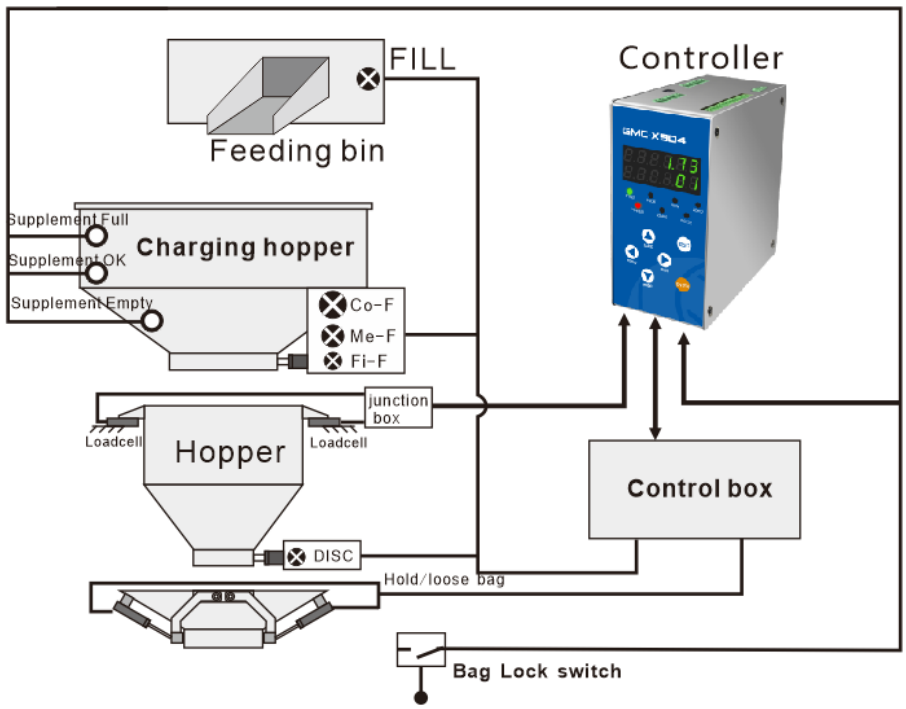
When the communication format uses Md-SP protocol, it is compatible with 8802S-P protocol address.

6.Automate the packaging process

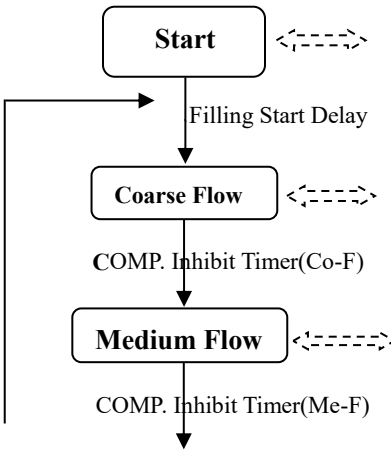
GMC-X9042 packaging controller can automatically control the whole packaging process of fast, medium and slow feeding and discharging in the automatic packaging state There are hopper scale, no hopper scale, jumbo package scale, valve scale and PLC multiple modes to choose from The structure and working mode of the scale are set in the scale parameters under the working parameters

6.1 With a single scale hopper

In this mode, the material is fed from the hopper through the feeding mechanism to the measuring hopper (fast, medium and slow), and the weight sampling of the instrument measurement control process is completed in the measuring hopper (the weighing sensor is installed on the measuring hopper) After the measurement is completed, the material is discharged into the packaging bag through the discharge mechanism on the measuring hopper Its structure is shown in the following figure:



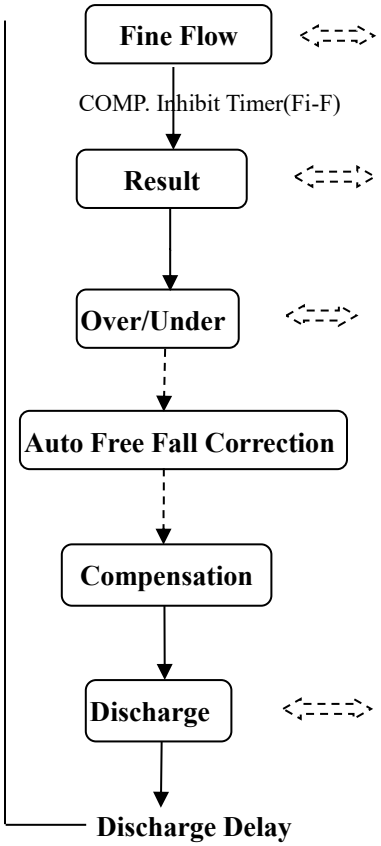
Basic process description:



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

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

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



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

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

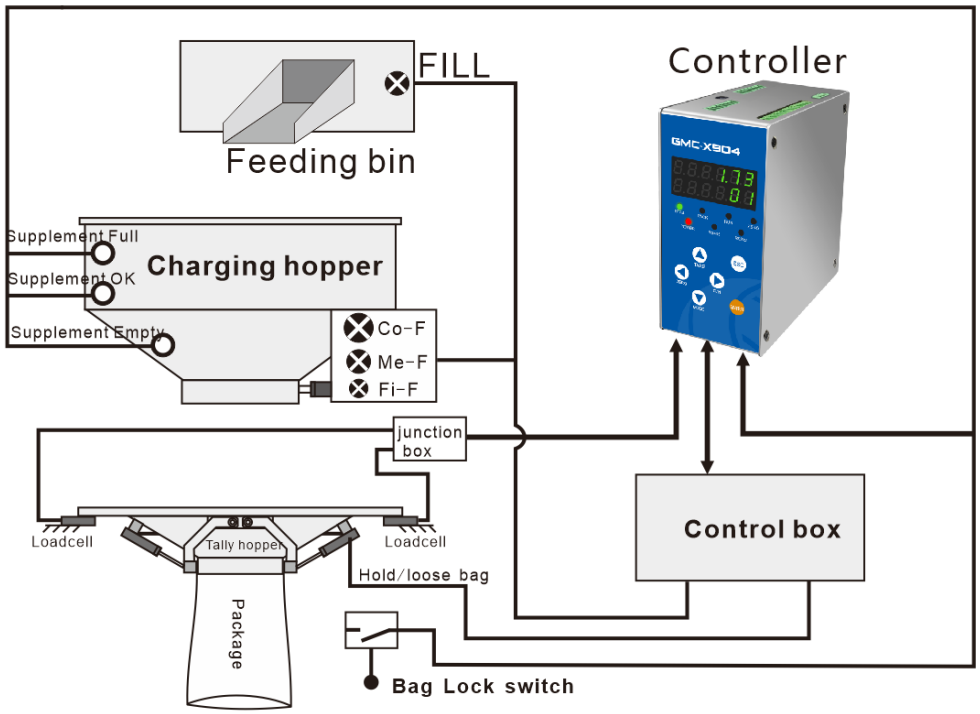
Over/under judgment, Auto Free Fall Correction and Compensation function are packing secondary function,if Recipe Paracontroller in function ON/OFF is OFF, discharge directly

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

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

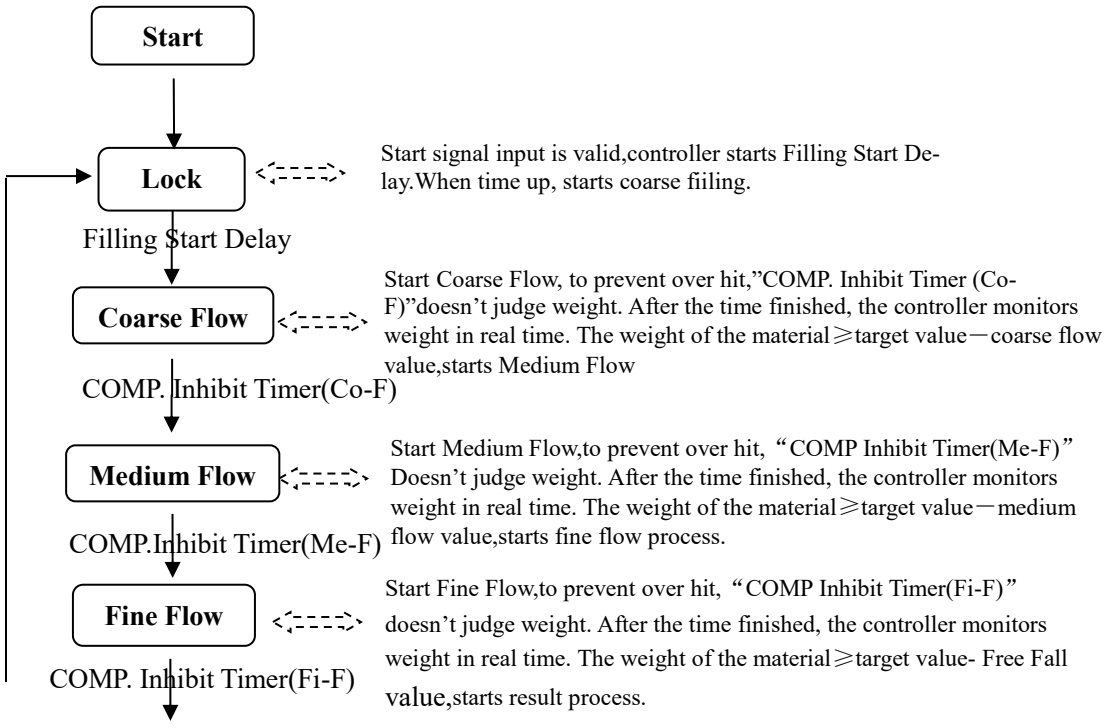
6.2 No hopper scale

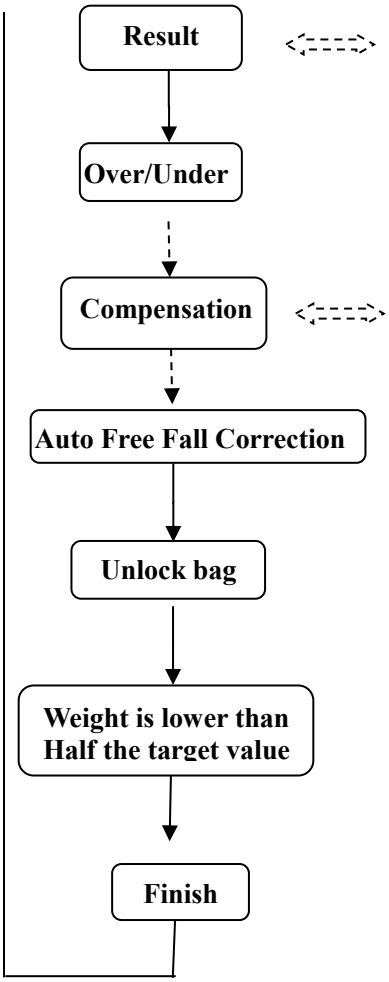
In this mode, the material is directly fed from the hopper to the bag through the feeding mechanism (fast, medium and slow), and the weight sampling of the instrument measurement control process is completed in the bag (the weighing sensor is installed on the hopper). After the measurement is completed, the instrument control directly loosens the bag Its structural form is shown in the following figure:



The difference between the no hopper packaging process and the hopper packaging process is that the loadcell 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

Basic process description:





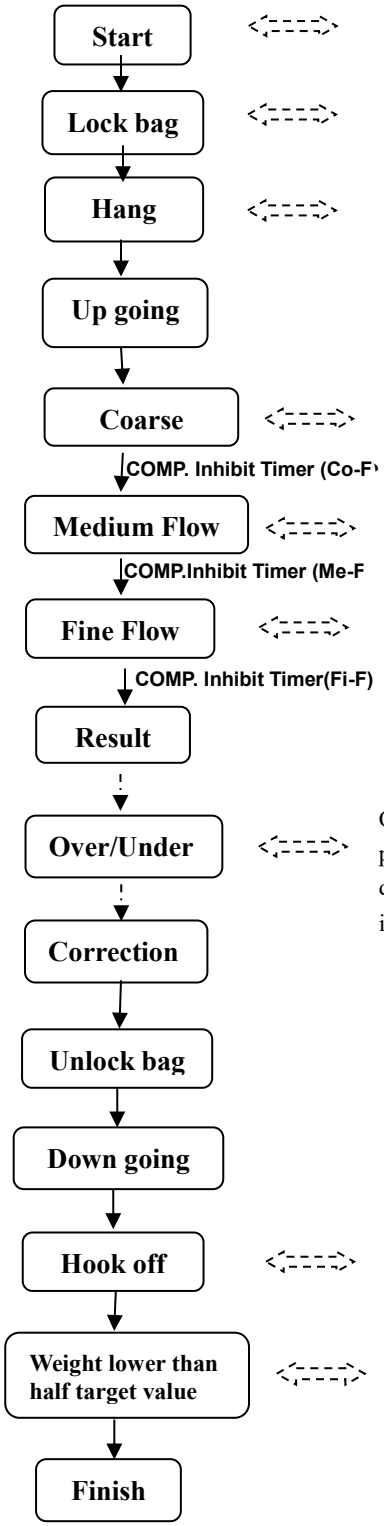
2 methods：Stable and Delay（recipt and paracontroller）,according to the selected way to go through the correction process and then into the Over/Under correction process.

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

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

6.3 Jumbo bag scale

Basic process instructions:



Start signal input is valid

Lock bag finish

Bag lock finish

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

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

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

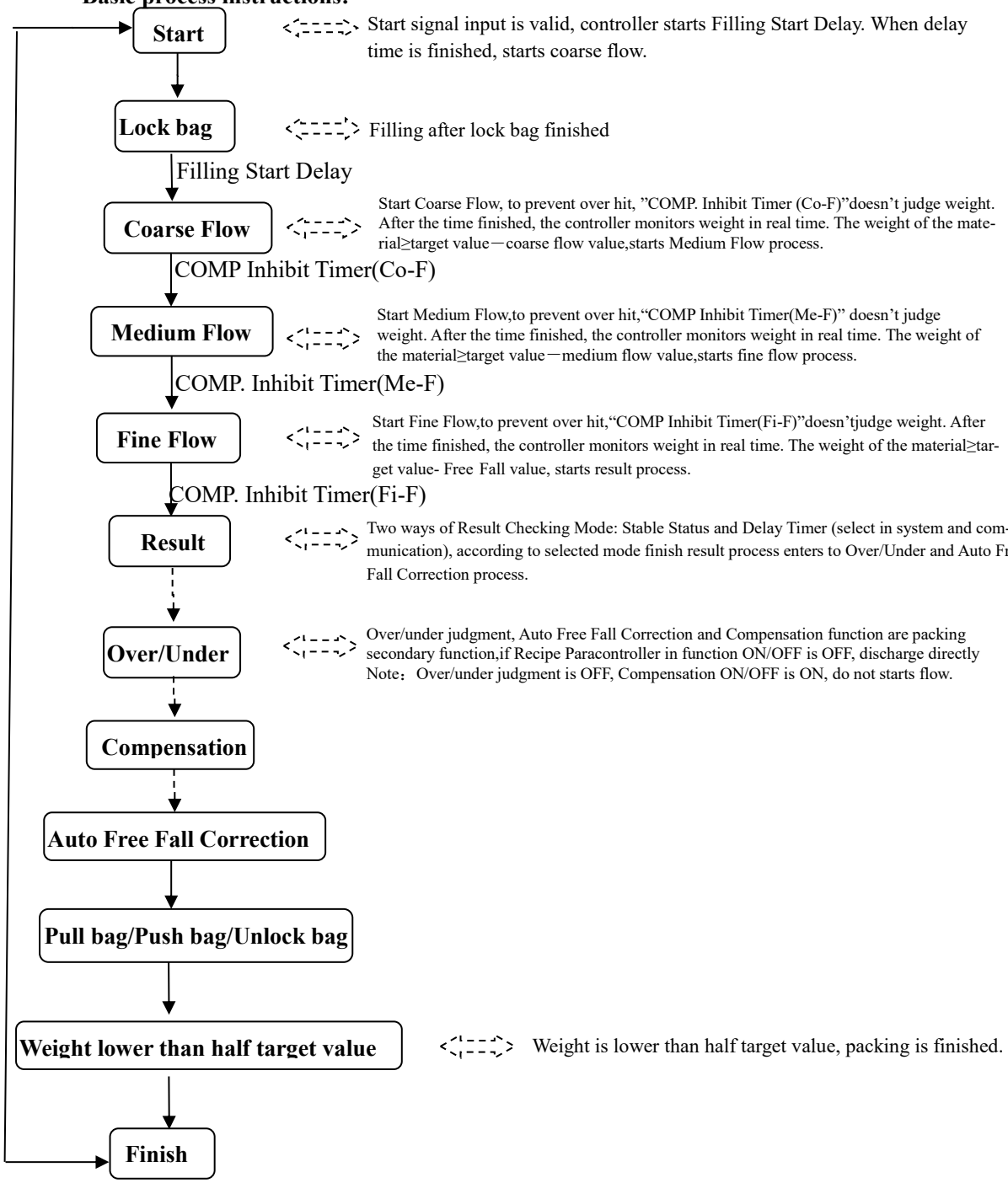
Over/under judgment, Auto Free Fall Correction and Compensation function are packing secondary function,if Recipe Paracontroller in function ON/OFF is OFF, discharge directly Note：Over/under judgment is OFF, Compensation ON/OFF is ON. do not starts flow.

Unlock bag,Down going,Hook off.

Weight is lower than half target value, delay finished starts next bagging process, Starts Filling Start Delay.

6.4 Valve scale

Basic process instructions:



6.5 PLC mode

In PLC mode, the status displayed on the main page of the instrument is changed to: coarse flow, medium flow, fine flow, over,under ,upper limit, lower limit, zero zone

When the weighing process begins, coarse flow, medium flow, fine flow output is effective in turn, and the main interface displays coarse flow, medium flow, fine flow in turn

When weighing value > target value + over value, the over output is effective;

When weigh value < target value - under value, the under output is valid;

When the weigh value > the upper limit value, the upper limit output is valid;

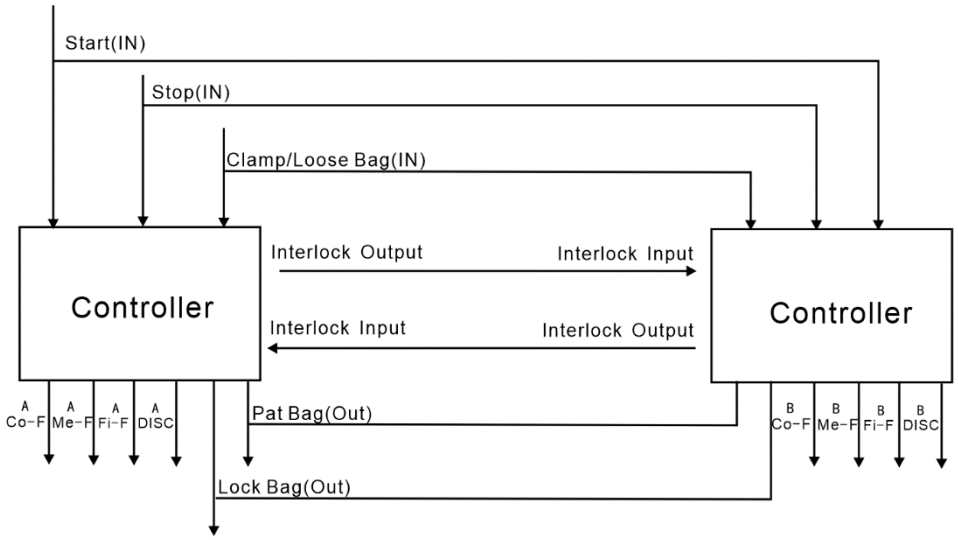
When the weighing value < the lower limit value, The upper limit output is valid;

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

6.6 Dual scale interlock packaging mode

Two instruments through the setting and wiring can be composed of double hopper, double no hopper scale interlock mode, two measuring hoppers can be weighed at the same time, connected to the same bag mechanism, two scales can be fed at the same time, improve the packaging speed. In the mode parameters under the working parameters, the working mode of the two instruments are set to interlock, one of which is used as A scale and one is used as B scale .Note: Pocket delay both instruments should be set identically Its structure is as shown in the figure below:

IO wiring reference figure below:



If the working mode of the two instrument controllers is double hopper scale interlock mode, it is necessary to set the target value of A scale and B scale, coarse flow, medium flow and drop value, the material from the storage hopper through two sets of feeding mechanisms to the two measuring hoppers (fast, medium and slow feeding), the running state can independently control the feeding speed of A scale and B scale discharging, automatic bag loosening of the whole packaging process A, B scale first target completion of the first discharging process

- Clamp Bag

With hopper: A scale or B scale, judge the bag signal before discharging, start the bag delay when the bag signal is effective, after the delay is over, the mechanism clamps the bag, and then start the discharging action, A, B scale who first completes the discharging first If one of the scales is discharging, then the other scale even if the target completion, but also need to wait for the next scale of the bag signal effective, before discharging

No hopper: judge the bag clamping signal before feeding, when the bag clamping signal is effective, both scales start the bag clamping delay, and the mechanism clamps the bag after the delay After the bag is completed, start the delay before feeding to avoid material leakage After the bag delay time is up, the instrument is judged stable, peeled after the stability, the bag weight is regarded as the tare weight, and then the instrument changes from gross weight to net weight and starts the feeding process

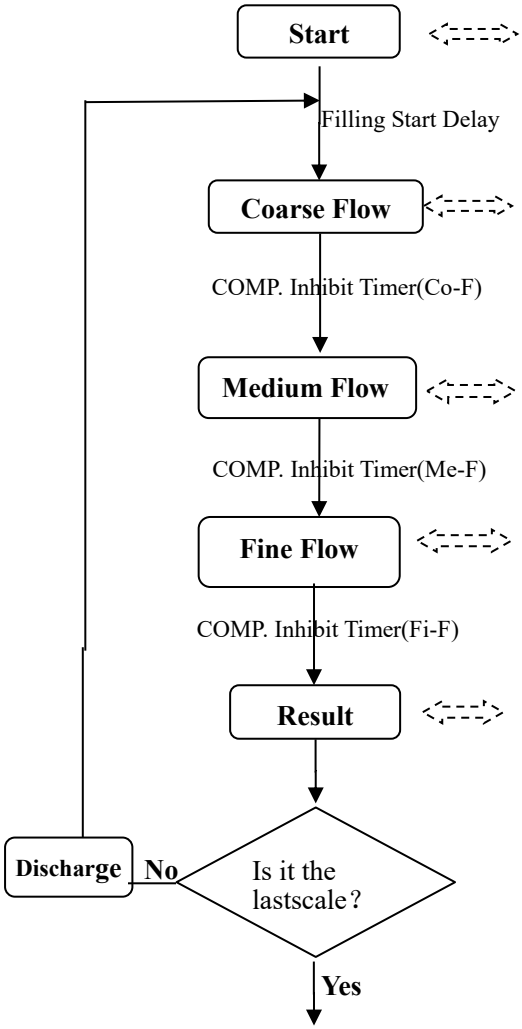
- Loosen the bag

With hopper: The instrument determines whether the material in the hopper of A scale or B scale is lower than the near zero value, below which the timer discharge delay is started When the delay time is up, the instrument closes the discharge and starts the release delay at the same time After the release delay, the bag is automatically released.

No hopper: start the loose bag start delay after the fixed value, and automatically loosen the bag after the end of the delay (If there is a patting bag function, start the loose bag start delay after the end of the patting bag) The instrument controls the conveyor signal output and starts the conveyor.

6.7 Binyes Multi-scale mode

Basic process description：



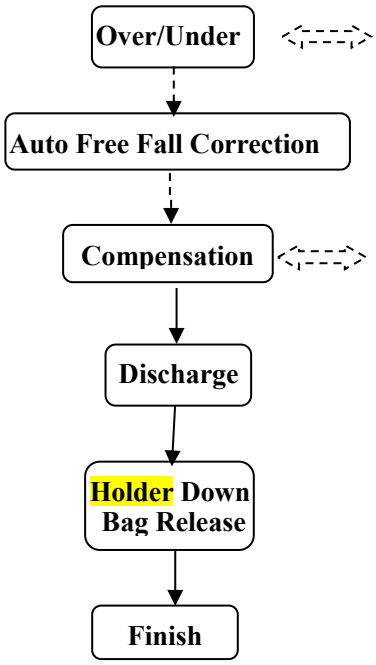
Effective start signal input, delay before controller start filling.After the delay to start coarse filling.

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

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

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

2 methods：Wait Stable and Time Delay（recipe parameter）,according to the selected way to go through the correction process and then into the Over/Under correction process.



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

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

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

7.Motor working process

7.1 Motor feeding part

7.1.1 Stepper motor feeding

Stepper motor control charging door switch: the IO involved is: O19(Feeding pulse)/ O20 (Feeding direction signal), I23(Feed door closed in place), I23 is determined by the type of closing in place signal

Take the feed fast and slow process as an example:

- Coarse Flow process: Instrument control O20 (Feeding direction signal) output to ensure that the motor rotation direction is the direction of opening the door, and then O19 (Feeding pulse) output pulse according to the set frequency of the feeding motor, control the feeding stepper motor to rotate in the direction of opening the door, (feeding pulse output) number reaches the set value to stop the output pulse signal, the feeding door to stop rotating, At this time, it is fast feeding state Then the instrument changes (motor rotation direction signal) output to the closing direction
- Medium Flow process: O19 (Feeding pulse) outputs the pulse according to the set charging motor frequency, controls the charging stepper motor to rotate in the direction of closing the door, stops the output pulse signal after the number of O19 (Feeding pulse) reaches the set value, and the charging door stops rotating At this time, it is the feeding state
- Fine Flow process: O199(Feeding pulse) output pulse according to the set frequency of the charging motor, control the charging stepper motor to continue to rotate in the direction of the door, O19 (Feeding pulse) number reaches the set value after the output pulse signal stops, the charging door stops rotating, at this time for the slow loading state
- Feeding off: O19(Feeding pulse) output pulse according to the set feeding motor frequency, control the charging stepper motor continue to rotate in the direction of closing the door, until I23(Feed door closed in place) input effective stop output pulse signal, charging door stop rotation, at this time charging completely closed

Note: If the closing process time exceeds the feeding door closing timeout time set by the charging door closing timeout time, the instrument has not detected (the feeding door is closed in place), then the instrument will stop O19(Feeding pulse) and alarm the feeding door closing timeout

7.1.2 General motor charging

Ordinary motor control feeding door switch: the IO involved is: O25 (Open gate when feeding)/O26 (Close gate when feeding), I23(Feed door closed in place)

Take the feed fast/medium/slow process as an example:

- Coarse Flow process: the feeding process begins after the delay time The instrument first makes the O25 (Open gate when feeding) signal output effective, the effective time is the fast feeding door opening time, and the fast feeding process begins
- Medium Flow process: When the weight of the material in the hopper is greater than or equal to the target value of a single scale - fast remain, the O26 (Close gate when feeding) signal output is effective, and the effective time is "fast feeding door opening time - fast feeding door opening time"
- Slow feeding process: when the weight of the material in the hopper is greater than or equal to the target value of a single scale - free fall, the O26 (Close gate when feeding) signal output is effective, and the effective time is "fast feeding opening door time - slowly feeding opening door time"
- Fine Flow process: when the weight of the material in the hopper is greater than or equal to the target value of a single scale - slow remain, the O26 (Close gate when feeding) signal output is effective until the feeding door is detected in place signal I23

(Feed door closed in place) Note: If the closing process time exceeds the ①closing timeout time of the feeding door, the instrument has not detected I23 (Feed door closed in place), then the instrument will stop O26 (Close gate when feeding), and alarm the feeding door timeout ②When the instrument is started, it is necessary to detect whether the feeding door and discharge door are in the limit If they are not in the limit, the alarm will be generated and the door cannot be started.

7.2 Motor clamp bag part

7.2.1 Stepper motor clip loose bag

Stepper motor control clamp bag: the IO involved is: O21 (Clamp/loose bag pulse)/ O22 (Clamp/loose bag direction signal)/ I25 (Loose bag in place), (I25 signal is determined by the type of loosing bag in place signal)

Taking the process of clamp/loose the bag under the measuring hopper mode as an example:

- Bag clamping process: The instrument controls the output of O22(Clamp/loose bag direction signal)to ensure that the motor rotation direction is the clamp/loose bag direction, and then O21(Clamp/loose bag pulse) outputs the pulse according to the set clamp/loose bag motor frequency, controls the clamp/loose bag stepper motor to rotate in the Clamp/loose bag direction, and stops the output pulse signal after the number of O21 (Clamp/loose bag pulse) reaches the set clamp/loose bag required pulse number At this time, the bag clamping mechanism is in the state of bag clamping The instrument then changes the O22 (Clamp/loose bag direction signal) output to the clamp/loose bag direction.
- Loose bag process: O21 (Clamp/loose bag pulse) output the pulse according to the set frequency of the loose bag motor, control the loose bag stepper motor to rotate in the direction of the loose bag, until the input of I25 (Loose bag in place) is detected and effective, stop the output pulse signal, at this time, the state of the loose bag Note: If the bag loosening process time exceeds the set bag loosening process timeout time, the instrument has not detected I25(Loose bag in place), then the instrument will stop output O21 (Clamp/loose bag pulse), and alarm bag loosening timeout.

7.2.2 Motor double limit clamp/loose bag

Ordinary motor double limit control clamp/loose bag: the IO involved is: O6(Clamp bag)/ O27(Loose bag), I21(Clamp bag in place)/I25(loose bag in place) (The I25 signal is determined by the type of loose bag in place signal)

Take the process of clamp/loose bag in measuring hopper mode as an example:

- Bag clamping process: the instrument output bag clamping signal controls the bag loosening motor to rotate in the direction of bag clamping, until the bag in place signal input is detected and effective, stop the output bag clamping signal, at this time 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 in place, then the instrument will stop the output bag clamping signal, and alarm bag clamping process timeout
- Bag loosening process: the instrument output bag loosening signal to control the bag loosening motor to rotate in the direction of bag loosening until it detects the bag in place signal input is effective and stops output bag loosening signal At this time, the bag clamping mechanism is in the bag loosening state. Note: If the bag loosening process time exceeds the set timeout time of the bag loosening process, the instrument has not detected the bag loosening signal, then the instrument will stop output the bag loosening signal, and alarm the bag loosening process timeout

7.2.3 Motor single limit clamp loose bag

Ordinary motor double output control clip bag: the IO involved is: O6(Clamp bag)/ O27(Loose bag), I21(Clamp bag in place)
Take the process of clamp/loose bag under the measuring hopper mode as an example:

- Bag clamping process: instrument control switch output signal, output signal until detected bag in place signal input effective, the output signal output invalid, to achieve equipment bag clamping
- Loose bag process: the instrument controls the output signal of the IO to realize the equipment loose bag, the output signal duration is 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 in place signal, then the instrument will stop output, and alarm the bag clamping process timeout

7.3 Motor discharging part

7.3.1 Stepping motor discharging

Stepper motor control discharging: the IO involved are: O23(Discharge pulse), O24(Discharge direction signal), I22(Discharge door open in place)
Take discharging as an example:

- Discharging door opening process: Instrument control O24 (Discharge direction signal) output, ensure that the motor rotation direction is the direction of the door opening, and then O23 (Discharge pulse) output pulse according to the set discharge door opening motor frequency, control the discharge stepper motor rotation to the discharge door opening direction, O23 (Discharge pulse) number reaches the value set by the discharge pulse number to stop the output pulse signal, At this time, the discharging mechanism is in the open state
- Discharging and closing process: After the discharging door is opened, the instrument detects that if the weight in the hopper is lower than near zero, then the discharging delay time is started After the discharging delay time is over, the instrument changes the output of O24 (Discharge direction signal) to the closing direction, and O23(Discharge pulse) outputs the pulse according to the set discharge closing motor frequency to control the rotation of the discharge stepper motor to the closing direction Until the detection of I22 (Discharge door open in place) input effective stop output pulse signal, at this time for the closed state. Note: If the closing process time exceeds the set discharging and closing timeout time, the instrument does not detect the closing in place signal I22 (Discharge door open in place), then the instrument will stop output O23 (Discharge pulse), and alarm the discharging and closing timeout

7.3.2 Single limit discharge of motor

Ordinary motor positive and negative single limit mode control discharge: the IO involved are: O28(Close gate when discharging), I24 (Discharge door closed in place)
Take the discharging process as an example:

- Discharging door opening process: At the beginning of the dishcarging process, the instrument outputs the discharging signal to control the discharging motor to rotate in the direction of the discharging door opening, and continues the discharging motor door opening signal output time set by the discharging door output time, and then closes the discharging signal output
- Discharging door closing process: after the discharging door is opened, the instrument detects the weight in the hopper if it is lower than near zero, then the discharging delay time is started After the discharging delay time is over, the output discharging and closing signal is output and the discharging motor is controlled to rotate in the direction of

the discharging and closing door until the discharging door is detected to be closed in place and the input signal is effective At this time, the discharging door is closed .

Note: If the discharging door closing process time exceeds the set discharging door closing timeout time, the instrument has not detected the discharging door closing in place signal, then the instrument will stop output, and alarm the discharging door closing timeout.

7.3.3 Motor double limit discharge

General motor positive and negative rotation double limit mode control discharge: the IO involved are: O9(Discharging) O28 (Close gate when discharging), I24(Discharge door closed in place)/ I22(Discharge door open in place).
Take the discharging process as an example:

- Discharging door opening process: At the beginning of the discharging process, the instrument outputs the discharging signal to control the discharging motor to rotate in the direction of the discharging door, and stops the output discharging signal after the signal input of the discharging door is valid. At this time, the discharging door is open.

  Note: If the discharging door opening process time exceeds the set discharging door timeout time, the in strument has not detected the discharging door open in place signal, then the instrument will stop output, and alarm discharging door timeout.
- Discharging door closing process: After the discharging door is opened, the instrument detects that if the weight in the hopper is lower than near zero, the discharging delay time will be started After the discharging delay time is over, the discharging and closing signal will be output, and the discharging motor will be controlled to rotate in the direction of the discharging and closing door until the loading and closing signal of the discharging door is detected and effective, and the discharging and closing signal will be stopped At this time, the discharging door will be closed .

  Note: If the discharging door closing process time exceeds the set discharging door closing timeout time, the instrument has not detected the discharging door closing in place signal, then the instrument will stop output, and alarm the discharging door closing timeout.

7.3.4 Unidirectional rotation of the motor for one circle discharging

Ordinary motor one-way rotation one week single limit way to control discharge: the IO involved are: O9(Discharging), I24(Discharge door closed in place)
Take the discharging process as an example:

- Discharging door opening process: At the beginning of the discharging process, the instrument outputs the discharging signal to control the discharging motor to rotate in the direction of the discharging door, and continuously sets the discharging motor door opening signal output time, and then closes the discharging signal output
- Discharging door closing process: after the discharging door is opened, the instrument detects the weight in the hopper if it is lower than near zero, then the discharging delay time is started After the discharging delay time is over, the discharging signal is output, and the discharging motor is controlled to continue to rotate in the direction of the discharging door, until the discharging door is detected to be closed and the signal input is effective, and the output discharging signal is stopped At this time, the discharging door is closed. Note: If the discharging door closing process time exceeds the discharging door closing timeout time, the instrument has not detected the discharging door closing in place signal, then the instrument will stop output, and alarm the discharging door closing timeout.

8. Instrument size (mm)