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M04

User's Manual

110609040002

V01.00.13_01

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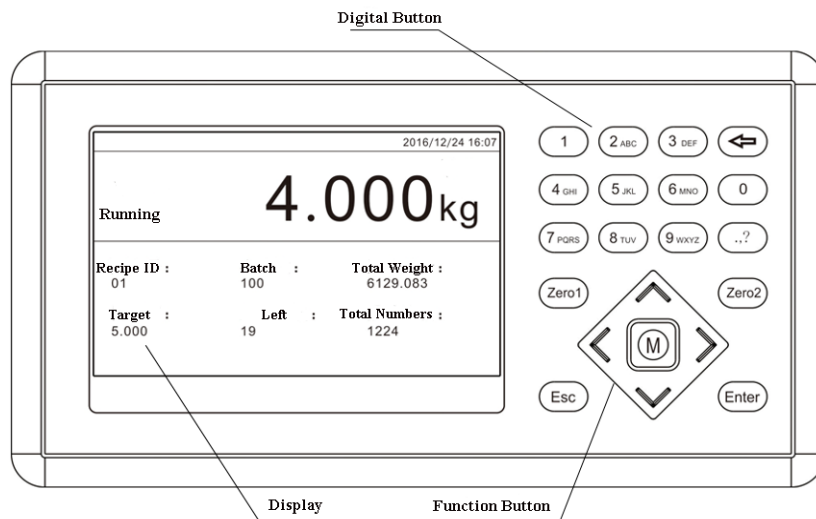
1. General Description

M04 Bagging controller is specially designed for single hopper packaging controller. It is easier to operate, working faster and more precise with new algorithm. USB port and two serial communication ports of the indicator made it easier to connect with system. So it is widely used in various bagging machines for rice, feed, seed and chemical etc.

1.1 Features and Functions

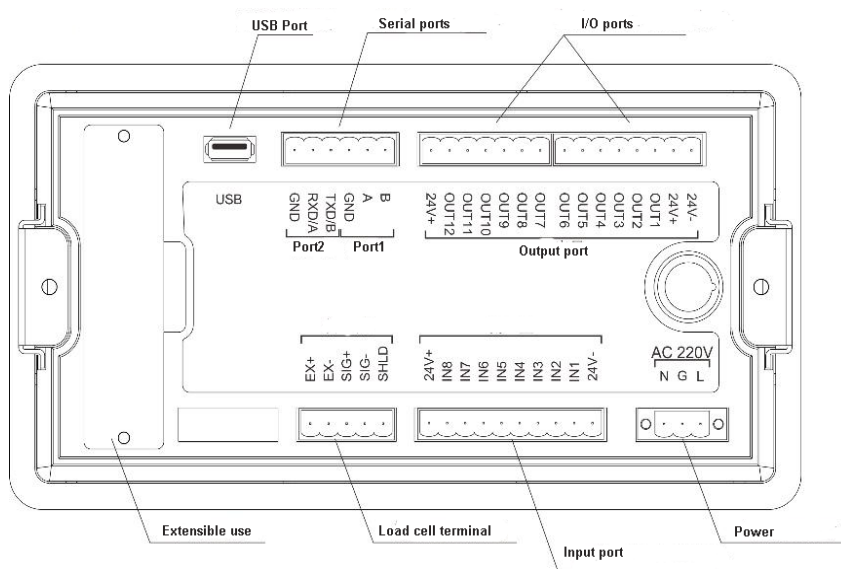
- Working mode: with or without a material hopper and PLC mode
- 20 On/Off data input and output(8 in and 12 out), which can be defined by user.
- Function of I/O testing to make bagging machine adjusting easier.
- Automatic three-way feeding speed control and optional 'fine filling inching' function.
- 20 recipes can be stored for different weighing capacity.
- Input & output parameters easily with USB port.
- Material filling control function to make indicator and equipment connection easier.
- Free fall correction.
- Multilevel of digital filter
- Batching times setting
- Bag-patting function for powdery material bagging.
- Automatic Zero-Tracking function.
- Date and time setting
- Identity setting for secondary user.
- Two serial communication ports to connect with printer, computer or a second display.

1.2 Front Panel Description



- ◆ Display Area: show weighing data, status and some recipe information
- ◆ Digital Button: input data and select parameter
- ◆ Function Button:
 - 【ZERO1】 Clear weighing data.
 - 【ZERO2】 Clear weighing data.
 - 【M】 Set parameters
 - 【ESC】 Exit and return to main menu.
 - 【ENTER】 Confirm status. Also it can check shortcut interface when in stop status.

1.3 Rear Panel Description



1.4 Specification

1.4.1 Total Specification

Power Supply: **AC90V-260V 50Hz/60Hz±2%**

Power Supply Filter: **Installed inside.**

Working Temperatures : **-10~ 40°C**

Maximum Humidity: **90% R.H without dew**

Power: **15W**

Dimension: **218×118×76.5mm**

1.4.2 Analog Specification

Power Source for load cells : **DC5V 125mA (MAX)**

Input Resistance: **10MΩ**

Zero Point Adjustment range:

0.02~ 4mV (When the transducer is 1mV/V.)

0.02~ 8mV (When the transducer is 2mV/V.)

0.02~ 12mV (When the transducer is 3mV/V.)

Minimum Input sensitivity: **0.02uV/d**

Input Range : **0.2~ 15mV**

A/D Type: **Sigma - Delta**

A/D Rate: **120Times/Second,240Times/Second,480Times/Second,960Times/Second**

Non-Linear: **0.01% F.S**

Gain Drifting: **10PPM/°C**

Maximum Accuracy of Display: **1/100,000**

1.4.3 Digital Specification

Display: **5 inch TFT LCD Display (800*480)**

Negative Display: **“—”**

Overload Display: **“OFL”**

Decimal Position: **5 options**

2. Installation

2.1 Method

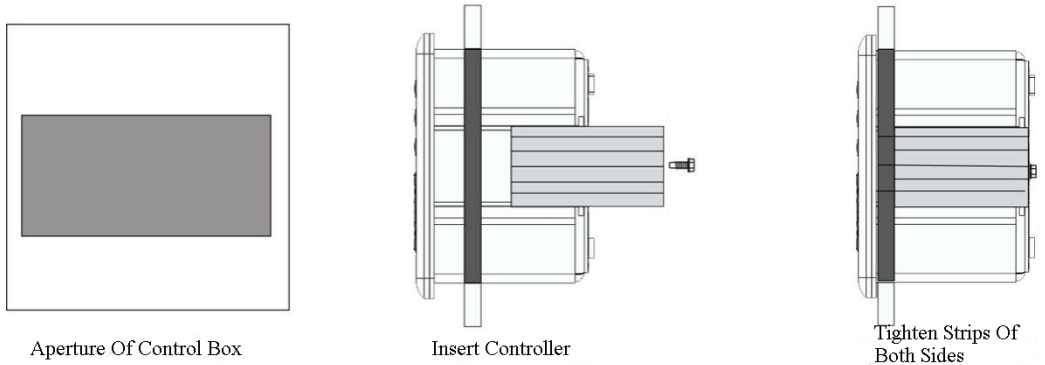
M04 packing controller uses AC100V-240V 50Hz/60Hz±2% power supply with grounding to guarantee the safety of the controller and other equipment connected.

The cables connecting M04 to load cells should not bind with other cables, especially power supply cables, and must use shielded cables, because the signals from the load cells is

low voltage analog signals.

Note: Please DON'T connect the Ground Wire of the controller directly to the GND of other equipment.

To install the M04 into a control box, please refer to the last chapter of this manual first, and make appropriate installation holes according to the position of screwholes on the housing box, remove the fixing plates on both sides of M04, put the controller into the housing box, fix it with the fixing plates and lock them with screws.

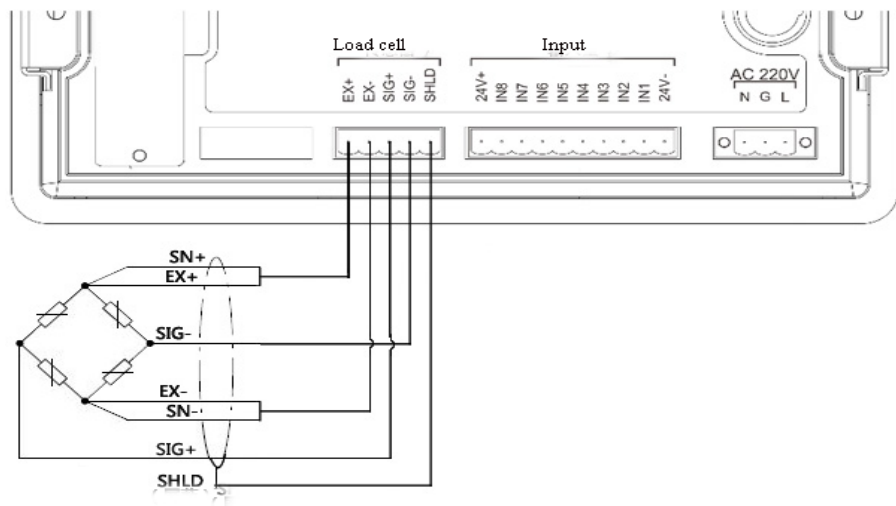


2.2 Load Cell Connection

Please refer to the picture below to connect load cells to the M04 controller.

When you chose the six-wired load cells, you must bridge the SN+ with EX+ and bridge the SN- with EX-.

Please keep the cables of load cells clear of other cables.



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

2.3 I/O Connection

M04 Controller uses optoelectronic isolation technology to transfer the ON/OFF data. This needs 24V DC power supply that is provided from outside, through the 24V+ and the 24V-. The I/O signal input is low level effective. The output is open-collector output. The driving current can reach 500mA.

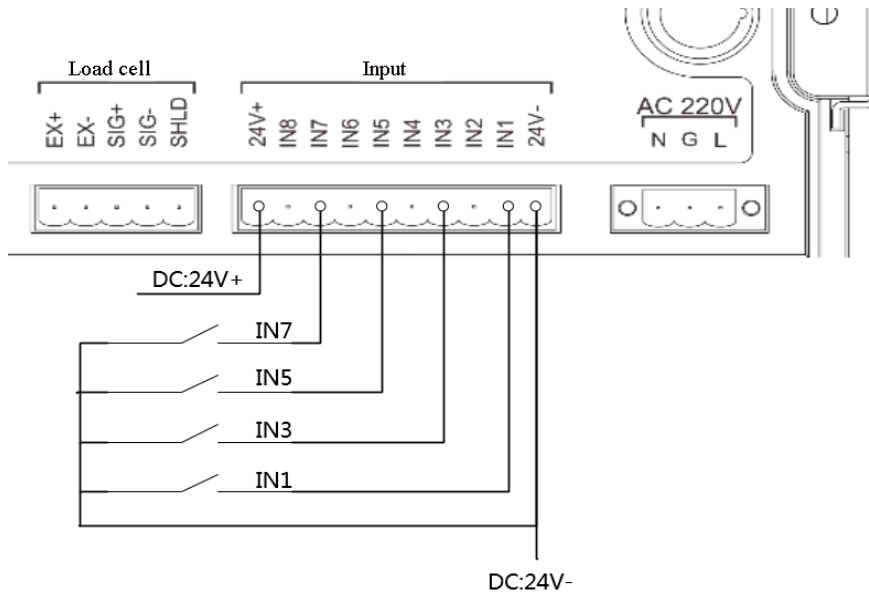


Figure: Input Schematics(Take IN1,IN3,IN5,IN7 for example)

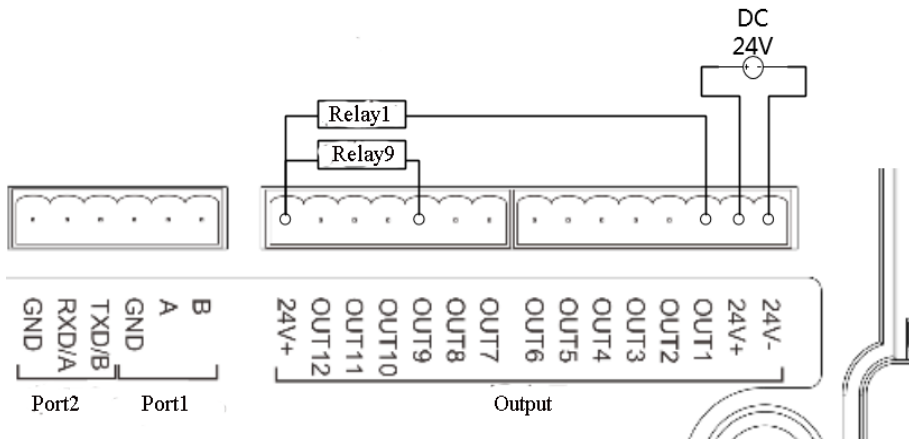


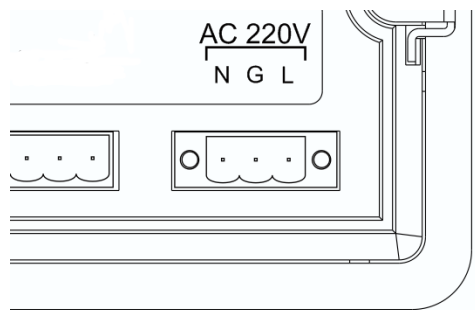
Figure: Output Schematics(Take OU1, OUT9 for example)

User can define I/O signals. (See 4.6 for details.)

2.4 Power Supply Connection

M04 packing controller uses AC90V-260V 50Hz/60Hz $\pm$ 2% power supply with grounding.

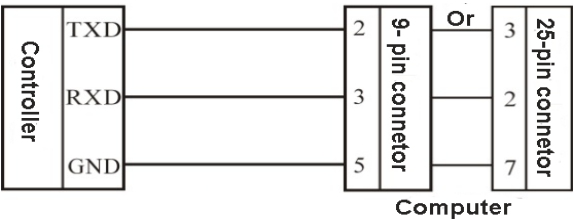
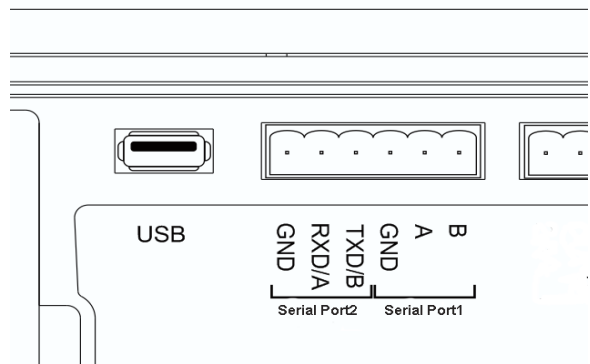
The Correct connections are depicted below.



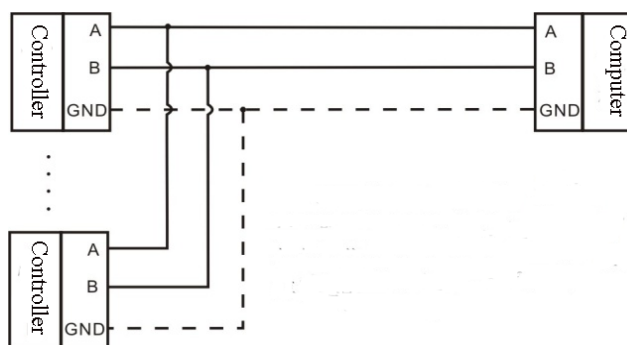
Power Supply Connector: L-Live Wire G-Ground Wire N-Null Wire

2.5 Serial Port Connection

M04 can provide two serial ports. It is depicted below. One for RS485, the other is for optional RS232 or RS485. Serial ports support MODBUS mode, rEAd mode, Cont mode and printing.



Connection between M04 and a Host Computer (RS-232)



Connection between M04 and a Host Computer (RS-485)

2.6 Ethernet connection

The network interface board configured with M04 has only one network communication interface, which is connected with **RJ-45** crystal head to communicate with the host computer or PLC. But it supports two upper computer or PLC to access the controller at the same time. The optional network port shall be declared when ordering.

After selecting Ethernet port, you can see the Ethernet port menu for setting IP address and port number in the communication parameters menu. Modbus-tcp communication can be carried out by setting the IP address and port number.

Using Modbus/TCP communication protocol, Modbus/TCP communication can be used in the upper computer to modify the network port parameters of the controller (including IP address, Mac address, port number, etc.). This modification is not immediately effective, and the controller needs to be restarted. It is also possible to modify the contents of the Ethernet port (such as IP address, Mac address, port number, etc.) through serial communication, and this modification is effective immediately.

After the network cable is inserted, the green indicator light in the port slot is log on, indicating that the network cable is well connected, and the orange indicator light is flashing, indicating that the network card has received network data. When Modbus communication is conducted, the orange light flashes more frequently, indicating that Modbus/TCP communication is normal. But when Modbus communication is interrupted, the orange light flashes very slowly.

3. User Permission

M04 provides different powers for operator, administrator and system administrator in order to avoid wrong operation. Among them, system administrator holds all operation rights. The permission of operator and administrator hold limited permission as below:

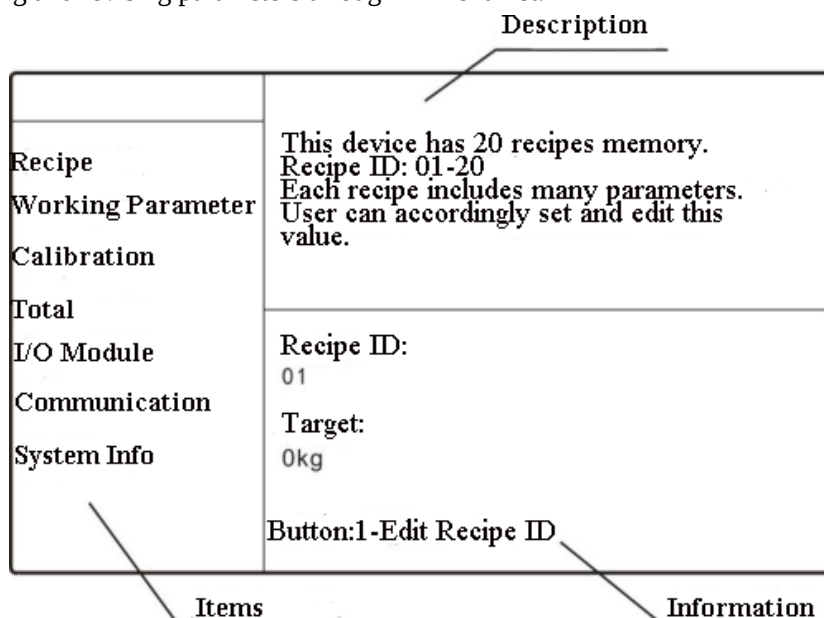
Permis- sion	Operation
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Operator	Not allow to set calibration parameter or calibration.
	Not allow to revise the working parameter.
	Not allow to define I/O.
	Not allow to delete or clear accumulated value.
	Allow to enter System information check version.
Technician	Not allow to revise weigher structure parameter in Working parameter.
	Not allow to set shortcut defines or input parameters by USB.

- ◆ Operators log on when connect power.
- ◆ User log in identity shifted by pressing Zero button. The initial password is 000000.
- ◆ To set password of administrator in User administration of System Info.

4. M Menu

Checking and revising parameters through M menu list.



As figure showed above, the left side is parameter list; the right side is brief description and parameter information.

- ◆ **【▲】 & 【▼】** :Shift parameter option.
- ◆ **【ENTER】** : Check and set parameter information.
- ◆ **【ESC】** : Return to main menu.

List	Parameters	Parameter list	Description
M	Recipe	Value	Result waiting setting

	Timer	Result waiting timer setting
	Overt /Under	Over/under weight and way parameters setting
	Auto Free fall Correction	Free fall correction and other parameters setting
	Fine Flow Mode	Fine flow inching mode setting
	UnderLimit Compensation	Compensation filling parameter setting
	Patting parameters	Pat time and method setting
	Sewing Parameter	Sewint parameter setting
	Other parameters	Single hopper combination Nos setting
	Ton Scale Parameter	Ton Scale Parameters Setter
Working parameter	Basic Parameter	Basic parameter setting
	Advanced parameter	Operation parameter setting
	Coding parameter	Coding parameter setting
	Weigher structure	Weigher parameter setting(Only for administrator)
Calibration	Weighing parameter	Unit,decimal point,scale range setting
	Zero calibration	Zero point calibration
	Weight calibration	weighing value calibration
ACUM Info Review	Recipes list	Read, clear, print recipe information
Batch	User can set batch parameter by pressing Enter	
I/O Module	Output define	Define output port
	Input define	Define input port
	IO test	Test port connection
Communication	Serial Port1-RS485	Serial port1(RS485) parameter setting
	Serial	Serial port2(RS232/RS485) parameter setting

		Port2-RS232/RS485	ter setting.Communication mode refers to 2.5
		Printing parameter	Printing parameter setting
	System info.	User Management	User password administration
		Password Management	Password administration of all parameters(Calibration password switch is ON)
		Recover/back up	All parameters recover with original setting and data back up.
		USB data Import	Input working parameter, recipes parameter,calibration parameter and others parameter.
		USB data Export	Output working parameter, recipes parameter, calibration parameter and others parameter from indicator.
		Shortcut Setting	Function of figure button setting
		System Version	Check software version and set system time.
		Other Setting	Language switch mode, terminal select, Adjust screen brightness and set screen saver time

4.1System information

Technician and administrator can edit user administration, exercise password administration, recover/back up data, set shortcut and check version through System info..

【◀】 & 【▶】 :Exchange functional option.

【▲】 & 【▼】 :Exchange selected function item.

【ENTER】 : Edit parameters.

【ESC】 : Exit.

System information	Information item	Description
User Management	1.User login	User ID. (Not allow to edit)
	2.Permission	Option:technician and operator
	3.Password ON/OFF	Option: ON/OFF.No need enter password when OFF.

	4.Edit password	Set/edit login password.Need to input original password when edit.
Password Mangement	1.Recipe password	Optional ON/OFF, user no need to input password when edit parameters. 【ZERO2】 can edit parameter password. The initial password is 000000.
	2.Working parameter password	
	3.Calibration password	
	4.I/O module Setting password	
	5.System info. password	
Recover/back up	1. Reset all (including calibration)	Press 【ENTER】 will reset all parameters.
	2. Reset all (Except calibration)	Press 【ENTER】 will reset calibration parameter, but not including calibration.
	3. Reset calibration parameter	Press 【ENTER】 will reset calibration parameter.
	4. Reset basic parameter	Press 【ENTER】 will reset fundamental parameter.
	5.Reset recipe parameter	Press 【ENTER】 will reset recipe parameter.
	6.Reset I/O Funcion	Press 【ENTER】 will reset I/O module define.
	7. Reset advanced parameter	Press 【ENTER】 will reset high rank parameter.
	8. Reset shortcut	Press 【ENTER】 will reset shortcut define.
	9.Execute parameter back up	Press 【ENTER】 will back up current parameters.
	10.Recovery From Backup	Press 【ENTER】 will recover parameter as back up data.
	11. Delete Backup	Press 【ENTER】 will delete back up data.
USB Data Import	1. All parameters	Input all parameters through USB
	2.Working parameter	Input working parameter through USB
	3.Recipe parameter	Input recipe parameter through USB

	4.Calibration parameter	Input calibration parameter through USB.	
	5.I/O Function	Input I/O parameter through USB.	
	6.Serial port parameter	Input serial port parameter through USB.	
	7. Shortcut Parameter	Input shortcut define through USB.	
USB data Export	1. All parameters	Output all parameters through USB.	
	2.Working parameter	Output working parameter through USB	
	3.Recipe parameter	Output recipe parameter through USB	
	4.Calibration parameter	Output calibration parameter through USB.	
	5.I/O Function	Output I/O parameter through USB.	
	6.Serial port parameter	Output serial port parameter through USB.	
	7.Shortcut Parameter	Output shortcut defines from USB.	
	8.ACUM Data	Output the accumulates of total, 20 recipes and 10 users.	
Shortcut setting	1.Button-1	Initial value: working parameter	Press 【ENTER】 to define shortcut. 【◀】 & 【▶】 :Turn pages.
	2. Button -2	Initial value: calibration	
	3. Button -3	Initial value: batch	
	4. Button -←	Initial value: target	
	5. Button -4	Initial value: system info.	
	6. Button -5	Initial value: recipe no.	
	7. Button -6	Initial value: total	【▲】 & 【▼】 :Select functional parameter value
	8. Button -0	Initial value: user administration	
	9. Button -7	Initial value: Communication parameter	
	10. Button -8	Initial value: IO Mod-	

	ule
11. Button -9	Initial value: recipe parameter
12. Button -,?	Initial value:no value.

Note: For defined digit button, you can enter indicator by press them accordingly. For example, digit 1 defined Recipe parameter; you enter recipe parameter if you press 1. If digit1 defined Run, the indicator works when press 1.

4.2Calibration

Calibration should be done when a M04 indicator is used at the first time, or the preset parameters can't meet the user's demand due to change any part of the weighing/bagging system.

To enter calibration parameter need to input correct password as it is protected by password per International Standard. Calibration password can be set in Password Administration of System Info.

As the Calibration interface showed, (User can enter through M interface or make shortcut of digit 2)

- ◆ **【◀】&【▶】**:Exchange calibration parameters (Weighing parameter, zero calibration and calibration with weight).
- ◆ **【▲】 & 【▼】**:Select parameter items.
- ◆ **【ENTER】**:Enter and edit parameter.
- ◆ **【ESC】**:Exit.

Calibration parameter	Calibration items	Description	
Weighing parameter	1.Unit	Initial value: kg. Four types: g/kg/t/lb	
	2.Decimal point	Initial value:0.000. Five types: 0~0.0000	
	3.Loadcell sensitivity	Initial value: 2mV/V . Three types: 1~3mV/V .	
	4.Resolution	Initial value:1. Six types: 1/2/5/10/20/50 .	
	5.Full scale	Initial value: 10.000 . $\leq$ Min. Scale Division $\times$ 100000	
Zero calibration	weight	Display present weight value.	Press 【ENTER】 to set zero point with clearing weighing hopper.
	voltage	Display the present output voltage of load cell	

Weight calibration	weight	Display present weighing value	Adding weight and inputting weighing value to finish calibration.
	voltage value	Display output voltage value with weight	

4.3 Working Parameter

The working parameter interface showed, (User can enter through M interface or make shortcut of digit 1)

- ◆ **【◀】&【▶】**:Change working parameters. (basic parameter, advanced parameter and coding parameter)
- ◆ **【▲】 & 【▼】**:Change items of working parameters.
- ◆ Press **【ENTER】** button, can enter and edit parameters.
- ◆ Press **【ESC】** button, exit.

Working parameter items	Parameters	Description
Basic parameter	1.Power-up zero	Optional ON/OFF.If ON, the controller will be auto zero when power up Initial value: OFF.
	2.Zero range	Initial value: 50. Range: 1~99.(Percentage)
	3.Stable range	The indicator is stable within this range. Initial value: 2. Range: 0~99(d) .
	4.Stable timer	Initial value: 0.3 . Range: 0.1~9.9 .
	5.Zero track range	The controller will be auto zero within the range. Zero tracking will not proceed if Zero. Initial value: 0. Range : 0~9(d) .
	6.Zero track timer	Initial value: 2.0 . Range: 0.1~99.9
	7.Digital filter	AD digital filter parameter:0 for non filter, 9 for strong filtering. Initial value: 7. Range: 0 ~ 9 .
	8.Advanced NO/OFF	Optional ON/OFF. The second filter will proceed on the basis of digital filter. Initial value: ON.
	9.sampling rate	Option:120 times per second,240 times per second, 480 times per second,960 times per second.

Advanced parameter	1.Auto zero interval	Zeroing after number times bagging. No zeroing for first time. Initial value: 0. Range:0~99. Only for bagging with hopper.
	2.Filling process filter	Filling process filter parameter: 9: Strongest filter. 4: Initial value. 1 ~ 9: Range.
	3.Waiting process filter	Result waiting filter parameter: 9: Strongest filter. 5:Initial value. 1 ~ 9:Range.
	4.Discharge process filter	Discharging filter process filter 9: Strongest filter. 3: Initial value. 1~9:Range
	5.Running stable timeout	Initial value:0.0. Range: 0 ~ 99.9 (per second).
	6.Waiting Mode	Judgment of Waiting: closing inching feeding and stable. Delay of Waiting: closing inching feeding and stable after holding time. Initial value: By delay timer
	7.Discharge mode	Discharge directly: the controller will discharge directly after value setting. Discharge allowed: the controller is waiting for the signal of allowing to discharge after value setting.
	8.Without hopper filling mode	Option: Gross weight and Net weight. First clear tare, then begin packing with net weight value. Initial value: net weight packing.
	9.Manual discharge add to total	Option: ON/OFF. The value will included in total when ON.
	10.Final weight holding	Option: ON/OFF. Fixed value holding until discharging weight value lower than zero value, showing present weight.
Coding	1. Coding de-	Option: ON/OFF.ON: Printing. Initial value: OFF.

parameter	vice ON/OFF	
	2.Coding start delay timer	Printing after locking bag. Initial value:0.5. Range: 0.0~99.9 second.
	3.Coding duration timer	Printing efficient time. Initial value: 0.5. Range: 0.0~99.9 second.
	4.Allow fill/discharge when coding	Option: ON/OFF. Non-stop when feeding or discharging. Initial value: OFF.
Weigher Structure	1.Weigher structure	Packing with hopper/Packing without hopper/PLC mode/Ton scale
	2.Working mode	Option: Ton scale /Scale A interlock/Scale B interlock; Initial value: Ton scale mode.
	3.Filling mode	Option: Solo filling and combination filling. Initial value: combination filling Combination filling: Coarse flow/ medium flow/ fine flow Medium flow/ fine flow Fine flow Solo filling: Coarse flow Medium flow Fine flow
	4.Dual hopper unlock bag mode	Select discharge mode. Initial value: discharge at different time.
	5.Conveyor start delay timer	Conveyor start time. Initial value:0. Range: 0~99.9seconds.
	6.Conveyor running timer	Conveyor running timer setting. Initial value: 0. Range: 0~99.9 seconds.
	7.Next filling delay timer	Repeat feeding delay time. Initial value:0. Range: 0~99.9 seconds.

4.4 Recipe Parameter

Recipe	This device has 20 recipes memory. Recipe ID: 01-20 Each recipe includes many parameters. User can accordingly set and edit this value.
Working Parameter	
Calibration	Recipe ID: 01 Target: 0kg Button:1-Edit Recipe ID
Total	
I/O Module	
Communication	
System Info	

When move to recipe parameter,

- ◆ Enter by Button 1 to select and edit 1-20 recipes accordingly.
- ◆ **【Enter】** selected recipe parameter.

In recipe parameter interface, (User can enter through M interface or make shortcut of digit 1)

- ◆ **【◀】** & **【▶】** Changing recipe parameters.
- ◆ **【▲】** & **【▼】** Changing items of recipe parameter.
- ◆ **【ENTER】** : Entering and editing item recipe parameters. (value, timer, under/over etc.)
- ◆ **【ESC】** Exit.

Recipe parameter item	Parameters	Description
Value	Weighing value parameter setting.	
	1.Target	Target value setting.
	2.Coarse flow Remains	When present weight $\geq$ Target value-Coarse flow value, and then shutoff coarse flow filling.
	3.Medium flow Remains	When present weight $\geq$ Target value-Medium flow value, and then shutoff medium filling.
	4.Free fall	When present weight $\geq$ Target value-Free fall value, and then shutoff fine flow.
	5.Near zero band	When present weight $\leq$ Near zero band, start t5 discharging delay timer.
Timer	Feeding delay timer parameter setting	
	1.Filling delay	With hopper mode: Begin feeding after filling delay. Zeroing in stability criterion at first if need.

		Without hopper mode: After bag locked, the indicator off tare and display net weight in stability criterion after filling delay.
	2.COMP. inhibit timer (Co-F)	Fast filling is ON to avoid impulsive force within COMP. inhibit timer (Co-F).
	3.COMP. inhibit timer (Me-F)	Medium filling is ON after fast filling completed to avoid impulsive force within COMP. inhibit timer (Me-F).
	4.COMP. inhibit timer (Fi-F)	Fine filling is ON after medium feeding completed to avoid impulsive force within COMP. inhibit timer (Fi-F).
	5.Over/under alarm timer	ON: Alarm timer will output when over/ under value.
	6.Result waiting timer	By delay timer: Closing fine filling and starting waiting, will move on to next step.
	7.Discharge delay timer	Discharging delay timer will start when weighing value $\leq$ zero range value, if finished, then closed discharging.
	8.Bag locked delay timer	By bag locked delay timer, bag locked completed.
	9.Unlock bag pre-delay timer	With hopper mode: When finish discharging, bag unlocked after unlock bag pre-delay timer. Without hopper mode: When finish patting bag, bag unlocked after unlock bag pre-delay timer.
Over/under	Over/under tolerance-alarm parameter setting	
	1.Over/under ON/OFF	Option: ON/OFF. Over/under judgment when ON.
	2.Over/under pause	Option: ON/OFF. The indicator will stop when over or under. Press 【ENTER】 will restart.
	3.Over value	When present weight $\geq$ target value + over value, it is over tolerance.
	4.Under value	When present weight $\leq$ target value - under value, it is under tolerance. Initial value:0.
Auto free fall correction	Free fall compensation parameter setting	
	1.Reference samples PCS	The indicator will make the average of thus times as compensation value. Initial value:0. Range:0~99. Note: If set 0, free fall compensation will close.

	2. Correction effective range	If free fall value is more than the percent of target value, the value will not be accounted to average. Initial value: 2. Range: 0.0~9.9 (Percent of target value)
	3. Correction percentage	Option: Four types between 25% to 100%. Initial value: 50%.
Fine flow mode	Fine flow jogging parameter setting	
	1. Jog flow ON/OFF	Option: ON/OFF. Jog flow is proceeding when ON. Initial value: OFF.
	2. Flow-On timer	Flow-On timer within a cycle when fine flow output. Initial value: 0.5. Range: 0.0~99.9 seconds.
	3. Flow-Off timer	Flow-Off timer within a cycle when fine flow output. Initial value: 0.5. Range: 0.0~99.9 second.
Under limit compensation	Under limit compensation parameter setting.	
	1. Compensation times	Initial value: 0. Range: 0~9. Note: The compensation will be off when sets 0.
	2. Flow-On timer	Flow-On timer within a cycle when compensation filling output. Initial value: 0.5 Range: 0.0~99.9 seconds.
	3. Flow-Off timer	Flow-Off timer within a cycle when compensation filling output. Initial value: 0.5 Range: 0.0~99.9 second.
Pat parameters	Pat parameters setting	
	1. Patting mode	Initial value: Disable. Option: Disable/ When filling/ After filling/ After waiting/ All time.
	2. Start-Up weight	Start to pat when weight value catches with start-up weight value. Initial value: 0. Range: 0~Full scale.
	3. Patting times (Filling)	Patting times (filling) parameter setting. Initial value: 5.

		Range: 0~99.
	4.Patting times (Waiting)	Patting times (waiting) parameter setting. Initial value:50. Range: 0~99.
	5.Patting start delay timer	Initial value: 0.1. Range: 0.0~99.9 (seconds)
	6.Patting ON timer	The valid time of pat-outputting in one cycle. Initial value:0.5. Range: 0.0~99.9 seconds.
	7.Patting OFF timer	The invalid time of pat-outputting in one cycle. Initial value:0.5. Range: 0.0~99.9 second.
	8.Extra ON timer	Only applied in without hopper mode. One extra ON timer will be added when patting completed. Initial value: 0.5. Range: 0.0~99.9 second. (Note: After patting bag, bag unlocked delay timer should be longer than extra ON timer to ensure bag unlocked after patting bag.)
Patting parameters (Ton scale mode)	Start-Up Weight-1	Start to pat when actual weight arrives start-up weight value. (Only valid in Ton scale mode) Initial value: 0 Range:0~Full scale
	Patting Times-1(Filling)	Parameter setting for patting times. (Only valid in Ton scale mode, unit: s) Initial value: 0 Range: 0~99
	Start-Up Weight-2	Start to pat when actual weight arrives with start-up weight value. (Only valid in Ton scale mode) Initial value: 0 Range:0~Full scale
	Patting Times-2(Filling)	Parameter setting for patting times. (Only valid in Ton scale mode, unit: s) Initial value: 0 Range: 0~99
Sew parameters	Sewing start delay	To start sewing delay timer after set sew start switch. Initial value: 0.5, range: 0.0~99.9s.

	Sewing ON timer	When delay timer ends, to start sewing and output sewing ON timer. Initial value: 4.0, range: 0.0~99.9s.
	Cutter ON timer	After sewing ON timer ends, to start cutter ON timer and output cutter ON timer. Initial value: 0.5, range: 0.0~99.9s.
	Sewing stop delay	When cutter completed, the sewing continue to work until sewing stop delay ends. Initial value: 0.5, range: 0.0~99.9s.
Ton scale parameters	Parameters setting for Ton scale mode	
	Hang Up Bag Delay	hanging up bag finish after delay times up.(unit: s) Initial value: 0.5 Range: 0.0~9.9
	Auto Hanger Switch	Check the on or off state of auto hanger switch when hanging up bag is finished. Waiting for manual hanger signal if it is off.
	Delay Before Hanger Rise	Delay time before hanger rise signal.(unit: s) Initial value: 5.0 Range: 0.0~9.9
	Delay Before Hanger Drop	Delay time before hanger down signal.(unit: s) Initial value: 5.0 Range: 0.0~9.9
	Fan Rotating Time	Air Blow time.(unit: s) Initial value: 0.5 Range: 0.0~9.9
	Hanger Reset Delay	After taking off the bag from drop-hanger, there is a delay time to start to reset hanger. (No delay before reset if this value is 0. Default state is no delay, unit: s) Initial value: 0 Range: 0.0~9.9
Other parameters	Filling combination times	With hopper mode: Bag unlocked after discharging. If 0, discharge directly after filling whether nip bag or not.

4.5 Communication Parameter

M04 equipped with two serial communication ports, and another extensible port can be chose as optional.

Description: (User can enter through M interface or make shortcut of digit 7)

- ◆ 【◀】 & 【▶】 Exchange communication serial port.
- ◆ 【▲】 & 【▼】 Exchange items of selected parameter.

- ◆ **【ENTER】** Enter and edit item parameter.
- ◆ **【ESC】** Exit and return to main menu..

Communi- cation	Items	Description
Commu- nication (RS485, optional RS485/RS 232 and external serial port)	1.Communication ID	Initial value:1. Option:1~99.
	2.Communication mode	Initial value:MODBUS-RTU communication mode. Option: MODBUS-RTU/Print/Cont/rEAd mode.
	3.Baudrate	Option: 9600/19200/38400/57600/115200. Initial value: 38400.
	4.Data format	Initial value: 8-E-1 Option: 8-N-1/ 8-E-1/ 7-N-1/ 7-E-1
	5. Dword format	MODBUS communication. Initial value: Hi-Lo Option: Hi-Lo and Lo-Hi.
Printing parameter	1.Auto print	Option: ON/OFF. Automatic printing when finished packaging if ON. Initial value: OFF.
	2.Printing format	Initial value:16 lines printing Option: 16 lines/32 lines/80 lines printing.
	3.Printing lan- guage	Initial value: English. Option: English/ Chinese.
	4.Printing line Nos	Printing lines after finishing. Initial value:0. Option: 0~9.

4.6 I/O Module

M04 has equipped with I/O points (8 input and 12 output), easily to connect with PLC.
The initialization definition of I/O as following:

Output		Input	
OUT1	Running	IN1	Start
OUT2	Stopped	IN2	Emergency stop
OUT3	Coarse flow	IN3	Reset zero
OUT4	Medium flow	IN4	Clear alarm
OUT5	Fine flow	IN5	Change recipe

OUT6	Result waiting	IN6	Bag lock/ unlock request
OUT7	Over/Under	IN7	Manual discharge
OUT8	Alarm	IN8	Manual fine flow
OUT9	Bag lock		
OUT10	Pat bag		
OUT11	Discharge		
OUT12	(-NZ-)		

4.6.1 Output define and Input define.

According to IO Module interface, (User can enter through M interface or make shortcut of digit 8)

- ◆ **【◀】 & 【▶】** Change Output point, Input point and IO test
- ◆ **【▲】 & 【▼】** Select IO points of parameters.
- ◆ **【ENTER】** Define.
- ◆ **【◀】 & 【▶】** Turn page and search for definition.
- ◆ **【▲】 & 【▼】** Select definition items.
- ◆ **【ENTER】** Enter.
- ◆ **【ESC】** Exit and return to main menu.

IO points description

Output		
Code	Items	Description
OUT1	Running	Output define signal is effective when running.
OUT2	Stopped	Output define signal is effective when stop.
OUT3	Coarse flow	Effective when present weight value< target value – the leading quantity of coarse filling .
OUT4	Medium flow	Effective when present weight value< target value – the leading quantity of medium filling .
OUT5	Fine flow	Effective when present weight value< target value – freefall value.
OUT6	Result waiting	After feeding finished and before discharging or patting bag.
OUT7	Ready	Effective when fixed value finished.
OUT8	Discharge	Control to discharge after starting.
OUT9	Over/Under	Effective when over/under.
OUT10	Alarm	Alarm for over/under, batch completed and so on.

OUT11	FILL	Control to fill material. When the under level input ineffective, the filling output effective; when the upper level input effective, the filling output ineffective.
OUT12	Supplement empty	When the under level input ineffective, the filling output effective.
OUT13	(-NZ-)	Effective when present weight is less than near-zero value.
OUT14	Batch complete	Effective when batching times finished.
OUT15	Coding	Effective when coding output.
OUT16	Interlock output	Only used in dual hoppers mode, connecting to interlock input of the other indicator.
OUT17	Bag lock	Effective signal to lock bag and ineffective signal to release bag.
OUT18	Pat bag	Control to pat bag.
OUT19	Conveyor start	Control conveyor start and stop in without hopper mode. The signal is effective to start conveyor and ineffective to stop conveyor.
OUT20	Over (PLC mode)	Over output is effective when weighing value>target + over value.
OUT21	Under (PLC mode)	Under output is effective when weighing value<target - over value.
OUT22	Upper limit	Upper limit output is effective when weighing value> upper value.
OUT23	Lower limit	Lower output is effective when weighing value<lower value.
OUT24	Sewing output	When sewing start delay time ends, sewing output is valid.
OUT25	Cutter output	When sewing output time completed, cutter output is valid.
OUT26	Hanging Bag	Control the hanging bag mechanism. Valid signal means hanging bag. Invalid signal means releasing bag. (Can not unlock bag while filling. Only allow to unlock bag before filling or filling completed.)
OUT27	AirBlow	Control AirBlow device. This signal is valid when hanger rise finish.(it has to set to invalid after blowing air finished)
OUT28	Return Valve	Control Air-return valve. This signal is valid when blowing air finish. (it has to set to invalid after filling completed and stopped)
OUT29	Hanger Up	Control the rising of hanger. Before filling, if hanging bag and

		lock bag are finished, this signal will be valid until Delay Before Hanger Rise times up. After unlock bag, this signal is valid until Delay Before Hanger Drop times up.
OUT30	MultiFunction Hanger	Control the hanger and patting together. Stop patting: this signal has the same state with Hanger Up . Start patting: this signal is opposite state with Pat bag (patting valid while hanger invalid, patting invalid while hanger valid)
OUT31	DISC patting	control DISC patting function output
	Input	
IN1	Start	Run status when impulse input is effective.
IN2	Stop	Return to stop status after finish bagging when impulse input is effective.
IN3	Emergency stop	Stop status when impulse input is effective.
IN4	Zero	Zero gross weight when impulse input is effective.
IN5	Clear alarm	Clear alarm when impulse input is effective.
IN6	Select recipe	Recipe no will add 1 when input one time. If target of recipe is 0, pass to next recipe.
IN7	Discharge request	Effective after result waiting settled.
IN8	DISC gate closed	Bag lock completed when effective.
IN9	Supplement full	Level input for upper level of material hopper.
IN10	Middle level	Level input for middle level of material hopper.
IN11	Under level	Level input for under level of material hopper.
IN12	Interlock input	Interlock mode for two indicators used in one system.
IN13	Manual discharge	Input one time for discharge, again to stop discharge.
IN14	Manual coarse flow	Input one time for fast feeding, again to stop fast feeding.
IN15	Manual fine flow	Input one time for fine feeding, again to stop fine feeding.
IN16	Start single loop	In stop status, start feeding, then stop after fixed-value time finished. Press ESC or input stop signal to return stop status.

IN17	Bag lock/ unlock request	Exchange to bag lock and unlock.
IN18	Bag locked	Effective when bag locked.
IN19	Start/stop switch	Effective signal to run; ineffective signal to stop after finishing packing.(Level signal)
IN20	Start/emergency stop switch	Effective signal to run; ineffective signal to stop.(Level signal)
IN21	Print all total	Effective in stop status.
IN22	Sewing start switch	If set ON, sewing start and then enter sewing start delay.
IN23	Hanging Re-request	Control the motion of hanging bag mechanism
IN24	Manual Hanger Up/Down	It should be a pulse input signal to control the action of hanger. To control the motion of hanger at stop state. It becomes a start signal of hanger's motion at running state. Not able to control hanger to pat manually when auto hanger switch is on. If the patting mode is Disable or After Waiting, it can pat bag while filling manually via hanger.
IN25	Allow Filling	Control filling. It should be a pulse input signal. If the switch I/O are defined, the feeding process can be started only when manually input signal is allowed and ton scale mode is valid.
IN26	Pause	Used to pause the packaging process, this input is the pulse input signal
IN27	Emergency stop	After switch in effect sewing machine stop

4.6.2 IO test

User can check the connection between output/input points and system by IO test.

Output point test: To start output test by pressing digital button, the connection to other system will be effective if the terminal light is on. If ineffective, then need to check IO power supply, wiring and so on.

Input point test: If the input signal is effective, the light will show green. If interface has not response, then need to check IO power supply, wiring and so on.

I/O Module			
Output define	Input define	IO test	
OUT1 1 Start	OUT2 2 Stop	OUT3 3 SP1	OUT10 <- Pat
OUT4 4 SP2	OUT5 5 SP3	OUT6 6 Hold	OUT11 0 Disc
OUT7 7 Over/Under	OUT8 8 Alarm	OUT9 9 Clip	OUT12 .,? Nzero
IN1 Start	IN2 Emergency stop	IN3 Zero	IN4 Clear alarm
IN5 Select parameter	IN6 Bag loose request	IN7 Manual discharge	IN8 Manual fine feeding

4.7 Total

User can check the recipe accumulate value, accumulate times, clear zeroing, printing etc. under Total. (User can enter through M interface or make shortcut of digit 6)

- ◆ 【◀】 & 【▶】 Select and check recipe information of 1-10,11-20.
- ◆ 【▲】 & 【▼】 Select recipe then press 【ENTER】 to confirm.
- ◆ Press 【ZERO1】 to delete present accumulated value.
- ◆ Press 【ZERO2】 to delete accumulated values of all recipes.

5. Function

5.1 Batch

Batch used as the reminder of packaging times. During running, when finished batch times totally, the controller will alarm and pause to wait. Press 【ENTER】 or input clear alarm signal to clear and return stop status. If set 0 to batch times, then don't alarm.

The batch needs to set by shortcut, then begin to configure.

Batch range: **0~50000**. Initial value: 0.(Don't alarm)

5.2 Filling Level Controlling

There are three kinds of filling levels: three levels (supplement full, supplement ok and supplement empty); dual levels (supplement full and supplement empty); single level (supplement level) and no filling levels.

5.2.1 Three levels

When supplement full, supplement ok and supplement empty are defined, the controlling is following:

Supple- ment full	Supple- ment ok	Supplement empty	Control process
effective	effective	effective	Material hopper is full.
ineffective	effective	effective	Material hopper is not full.
ineffective	ineffective	effective	Material hopper is not full, but not enough and will be used up soon, so the indicator will output filling signal till the upper level is effective, then stop.
ineffective	ineffective	ineffective	Material hopper is empty, so the indicator will stop feeding till the under level is effective.

The supplement ok will decide whether need to start filling material, meanwhile it is non-stop. So compared with dual levels, three levels will save time.

5.2.2 Dual levels

Dual levels (supplement full and supplement ok): When these two levels input ineffective, the filling output effective; when the supplement full input effective, the filling output ineffective. At same time, the feeding won't start till the supplement empty input effective before each feeding (coarse, medium or fine). But in feeding, it is no use whether the supplement empty input effective or not.

5.2.3 Signal level

Single level (supplement empty): The indicator won't control to fill material. The feeding won't start till the under level input effective before each feeding (coarse, moderate or fine). But in feeding, it is no use whether the under level input effective or not.

No filling levels: The indicator doesn't control to fill materials.

5.3 Material Calibration Process

Material calibration function is to use calibration method when it is inconvenient to use weight calibration on site. The steps are as follows:

Step 1: empty the hopper and click "1". This step is to calibrate the zero point, requirements: metering bucket empty, weighing body stable.

Step 2: click "2". When the feeding door is opened; some materials will be added to the metering bucket. Click "2" again, and the feeding door will be closed. (Note: if the "feeding time" setting in the weighing parameter is not 0, the feeding door will be automatically closed

after waiting for the manual feeding time.)

Step 3: click "3".When the discharge door is opened, the current relative millivolts are recorded in the background.The discharged material is reprocessed by electronic weighing and recorded.

Step 4: click "M" to enter the weighing data and click ok.Material calibration ends.

6. Serial Port Communication

M04 can provide two serial communication interface, one serial port for RS - 485 way (A and B, GND terminal port);Serial port 2. An optional RS - 232, RS - 485, default for the RS - 232, equipped with RS485 need when placing order, statement (terminal mouth RXD/A, TXD/B, GND), interface definition refer to section 2.5.Serial port support: the MODBUS RTU, continuous mode and print format.

6.1Printing method

When serial port parameter port 1 or 2 choose print mode, corresponding to the serial port can be connected to a serial printer to print the contents accumulated by implementation-dependent.

Print mode communication parameters refer to serial port parameters, need to note:

- 1) **Baud Rate**——parameters need to consist with connected printer.
- 2) **Communication format**——parameters need to consist with connected printer.

Note: When printing options for Chinese language, can not use the data bits to 7 formats, otherwise there will be printing error.

- 3) **Print format**——Peripheral parameters can be setted by print format of 24 or 32 formats. Besides by peripherals parameters printing language is Chinese or English.

6.1.1. Auto Print

In print mode, the automatic print switch for system and communication parameters is set to on.Then the weighing result will be automatically printed after the packaging process of each controller is completed. The printing format is optional: 16 columns, 32 columns and 80 columns.

English 32 print formats are as follows:

Packing list

Unit: kg

The total cumulative time	Recipe	target value	result
9	1	0.0333	0.0328
10	1	0.0333	0.0350

6.1.2 Manual Print

Manually print accumulative print content values for key or switch input. The total cumulative value, formula cumulative value and user cumulative value can be printed as required.

Print parameters are set under **【communication parameters】**; You can set the setting of printing language, printing format (16 columns, 32 columns, 80 columns are optional), sending and printing the number of paper lines.

For example, in the **【view accumulation】** interface, press "key 1" to print the total accumulated value as follows (set to Chinese and 32-column format)

Note: different contents can be printed by pressing different keys. There is a prompt below the display interface of the instrument

The total cumulative report

Time: 2018/09/29 11:17

Unit: kg

The total cumulative number of times: 7
Total cumulative weight: 11.292

6.2 Continuous mode

when the serial communication in **【communication parameters】** is generally selected as a continuous mode, and the communication parameters are set in accordance with the upper computer parameters, the upper computer will automatically receive the current status information of the controller:

STX	Scale No.	C	S	State 1	State 2	G/N	+/-	Display Value	CRC	CR	LF
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Among them:

STX—02H

Scale No.—When scale No. is 01, 30H31H

C —43H

S —53H

State 1— **0:** Stop, **1:** before filling, **2:** coarse flow, **3:** Medium flow, **4:** Fine flow,
5: Wait(filling complete), **6:** disc(with hopper)、patting(without hopper),
8: Batch complete

State 2—**M:** Non-Stable**4DH**, **S:** Stable**53H**, **O:** overflow**4FH**

G/N — G: GW**47H**, **N:** NW**4EH**

+/- —Signal, +: **2BH**, -: **2DH**

display value —7unit, Containing the decimal point

CRC — A checksum, where all the previous values are added and converted to decimal, then the last two digits are taken and converted to ASCII.(in which the tens place is first and the ones place is last), and 2

CR — **0DH**

LF — **0AH**

6.3 MODBUS Communication

In **【communication parameters】**, modbus-rtu is generally chosen for serial communication. When the communication parameters are set in accordance with the upper computer, modbus-rtu protocol is adopted for communication.

MODBUS address assignment:

PLC Address	Protocol Address	Meaning	Description	
The following contents are for only read register（Function code is 0x03）				
Only Read Parameters				
40001	00000	Present status 1	byte	Description
			.0	Remain
			.1~14	Remain
			.15	Locked status: 1 Locked
40002	00001	Present status 2	.0	Instable weight: 0 ； stable: 1
			.1	Non-zero: 0 ； zero: 1
			.2	Present symbol showed: +/- +: 0 ； -: 1
			.3	Weight over limit
			.4	Weight under limit
			.5	Load cell over limit
			.6	Load cell under limit
			.7	Stable mV: 1 instable: 0
			.8~15	Remain
40003	00002	Present weight	4 bytes, showing weight. Note: When indicator	

40004	00003		shows“OFL”, weight value returns 0xFFFFFFFF.		
40005	00004	Total weight	4 bytes, non symbol, mean accumulated weight.		
40006	00005				
40007	00006	Accumulated nos.	4 bytes, non symbol, mean accumulated nos.		
40008	00007				
40009	00008	Over nos.	Accumulated over nos., range: 0~9999.		
40010	00009				
40011	00010	Under nos.	Accumulated under nos., range: 0~9999.		
40012	00011				
40013	00012	Coarse flow time of last bag	4 bytes, unit: ms.	The data of last bag will update after next bagging finished.	
40014	00013				
40015	00014	Medium flow time of last bag	4 bytes, unit: ms.		
40016	00015				
40017	00016	Fine flow time of last bag	4 bytes, unit: ms.		
40018	00017				
40019	00018	Result waiting time of last bag	4 bytes, unit: ms.		
40020	00019				
40021	00020	Weight of last bag	4 bytes, with symbol.		
40022	00021				
40023	00022	Packing time of last bag	4 bytes, unit: ms.		
40024	00023				
40025	00024	Left batch nos.	Left batch nos.		
40026	00025	Bagging speed	Update every 30s.		
40027 40041	00026 00040	Reserved			
40042	0041	Run status	byte	illumination	
			.0	Run: 1,Stop: 0	
			.1	Before filling: 1	
			.2	Coarse filling: 1	

			.3	Medium filling : 1
			.4	Fine filling : 1
			.5	Result waiting : 1
			.6	Over/under pause : 1
			.7	Overlimit : 1
			.8	Underlimit : 1
			.9	Under limit compensation : 1
			.10	Ready: 1
			.11	Discharge : 1
			.12	Near zero : 1
			.13	Bag locked
			.14	Pat bag
			.15	Waiting scale B unlock
40043	0042	Condition status	.0	Gross weight:0 ; net weight:1
			.1	Finished: 1
			.2	Batch completed : 1
			.3	Filling supplement : 1
			.4	Supplement empty : 1
			.5	Supplement full : 1
			.6	Supplement ok : 1
			.7	Supplement empty : 1
			.8	DISC gate closed : 1
			.9	Discharge : 1
			.10	Coding : 1
			.11	Hanging Bag: 1
			.12	Air Blow: 1
			.13	Air-return : 1
			.14	Hanger up: 1

			.15	reserved
40044	00043	Alarm (Manual remove)	0- Non alarm 1- Batch completed 2- Stop when over limit/under limit	
40045	00044	Calibration alarm (Auto clear in 3s)	0- Non alarm 1- Full scale value (Smaller) 2- Full scale value (Bigger) 3- Zero voltage value (Higher) 4- Zero voltage value (Lower) 5- Zero calibration is instable 6- Over gain voltage 7- Gain voltage is smaller 8- Indicator platform is unstable 9- Wrong weight value inputted 10- Low accuracy after calibration 11- Zero point over limit 12- Unstable when zero operation 13- Zero operation when running 14- Target is zero when running 15- Timeout when running	
40046	00045	Run status 2	byte	illumination
			. 0	sewing machine run : 1 sewing machine stop: 0
			. 1	cutting machine run: 1 cutting machine stop: 0
			. 2	discharge patting: 1
			.3-.15	Remain
40047 40093	00046 00092	Remain		
40094	00093	AD sample rate	AD sample speed	
40095	00094	Version	4 bytes, without symbol. If 10,000 turn decimal, then it is 01.00.00.	
40096	00095			
40097	00096	Compile date	4 bytes, without symbol. If decimal value is 150611, then it is 11 th , June, 2015.	
40098	00097			
40099	00098	Compile time	4 bytes, without symbol. If decimal value is 150611,	

40100	00099		then it is 15:06:11.
Below parameters can be read and written. (The function code of write single register is 0x06, for multi-register is 0x10; for read register is 0x03.)			
Basic Parameters			
40101	00100	Power-up zero switch	Initial value: Off. Range: 0-1. (0: OFF; 1: ON)
40102	00101	Zero track range	Initial value: 0. Range: 0-9. Unit: d.
40103	00102	Zero track time	Initial value: 2.0. Range: 0.1-99.9s. (Unit: 0.1s)
40104	00103	Stable range	Initial value: 2. Unit: d
40105	00104	Stable timer	Initial value: 0.3s. Range: 0.1-9.9s
40106	00105	Zero range	Initial value: 50. Range: 1-99. Unit: %
40107	00106	Filter	Initial value: 7. Range: 0-9.
40108	00107	Advance Filter ON/OFF	Initial value: 1. Range: 0-1 (0: OFF; 1: ON)
40109	00108	AD conversion rate	Initial value: 2, 0: 120times/s, 1: 240times/s, 2: 480times/s, 3: 960times/s.
40110 40120	00109 00119	Reserved	
Calibration Parameters			
40121	00120	Unit	Initial value: 1, 0-g 1-kg 2-t 3:lb
40122	00121	Decimal	Initial value: 0-0; 1-0.0; 2-0.00 3-000; 4-0.000.
40123	00122	Load cell sensitivity	Initial value: 2 mV/V; 1: 1mV/V; 2: 2mV/V; 3: 3mV/V
40124	00123	Resolution	Initial value: 0. 0:0.001; 1:0.002; 2:0.005; 3:0.010; 4:0.020; 5:0.050
40125	00124	Full scale	Initial value: 10,000. Range: Full scale $\leq$ Decimal*100000 $\leq$ 999999.
40126	00125		
40127	00126	Calibration with weight	When write in 1, the present weight will be zero, only allowed to write when scale is stable. When read, it will return present millivolt value at zero calibration.
40128	00127		
40129	00128		Input weight value ($\leq$ Full scale)

40130	00129		tion with weight	When read, it will be the zero millivolt of loadcell.
40131	00130	Calibration without weight	Zero point calibration without weight	Input zero millivolt. Range: when loadcell is 2Mv/v, it is 0.020-8.000mV, bridge voltage is 5V. When read, it will be the zero millivolt of loadcell.
40132	00131			
40133	00132		Gain calibration without weight(millivolt)	Range: 2mV/V (loadcell) < millivolt ≤ 10.000mV-zero millivolt. When write in, indicator will store. When read, it will be zero millivolt of loadcell.
40134	00133			
40135	00134		Gain weight calibration without weight	Write in gain weight value(≤full scale). Must write in gain millivolt first, which proceed gain calibration by both weight value and millivolt value when write the register.
40136	00135			
40137	00136	filling time		Initial value: 0.0s Writing range: 0~99.9s
40138	00137			
40139	00138	Material calibration		Write the weight value corresponding to the gain millivolts; Press "manual discharge" to record the current relative millivolt, and use the two to calibrate the gain when writing this register; Return 0000H on read.
40140	40139			
40141 40160	00140 00159	Reserved		
40151	00150	Reset parameters		Read: 0 Write: 0 8800: Reset all parameters(including calibration) 8801: Reset all parameters(not including calibration) 8802: Reset recipe parameters 8803: Reset basic parameters 8804: Reset advanced parameters 8805: Reset calibration parameters 8806: Reset I/O module parameters 8807: Reset communication parameter 8808: Reset peripheral parameters Not allow to write in when run.
40152	00151	Parameters back up		Read: 0: Not back up data at present 1: Back up data at present Write: 8800: Proceed parameter back up (including recipe parameter, working parameter, I/O module parameter and communication parameter.)

40153	00152	Parameter back up date	4 bytes, without symbols.
40154	00153		
40155	00154	Parameter back up time	4 bytes, without symbols.
40156	00155		
Mode Parameter(Structure)			
40161	00160	Weigher structure	Initial value: 0. 0: with weighing hopper. 1: without weighing hopper.
40162	00161	Indicator working mode ON/OFF	Initial value: 0. 0: single hopper. 1: A scale interlocked. 2: B scale interlocked.
40163	00162	Filling mode	Initial value: 0. 0: single filling. 1: combination filling
40164	00163	Double indicators without hoppers synchro unlock ON/OFF	Initial value: 0. 0: asynchro unlock. 1: synchro unlock mode. 2: synchro unlock fast mode
40165	00164	Conveyor start delay timer t13	Initial value: 0s. Range: 0-99.9s.
40166	00165	Conveyor running timer t14	Initial value: 0s. Range: 0-99.9s.
40167	00166	Next lock bag delay timer filling ON t15	Initial value: 0 When scale A is at the front of conveyor and scale B is behind, meanwhile synchro unlock is OFF, t15 will start.
40168 40200	00167 00199	Reserved	
Indicator Parameters			
Recipe Parameter			
40201	00200	Target	Weight value: ≤ full scale value
40202	00201		
40203	00202	Coarse flow remains	
40204	00203		
40205	00204	Medium flow	

40206	00205	Remains	
40207	00206	Free fall	
40208	00207		
40209	00208	Over limit value	
40210	00209		
40211	00210	Under limit value	
40212	00211		
40213	00212	Near zero band	
40214	00213		
40215	00214	Start-up weight	
40216	00215		
40217	00216	Next filling delay timer t1	Initial value: 0.5s. Range: 0.0-99.9s.
40218	00217	Coarse flow for- bidden compar- ing time t2	Initial value: 0.9s. Range: 0.0-99.9s.
40219	00218	Medium flow forbidden com- paring time t3	Initial value: 0.9s. Range: 0.0-99.9s.
40220	00219	Fine flow for- bidden compar- ing time t4	Initial value: 0.9s. Range: 0.0-99.9s.
40221	00220	Over /Under alarm timer t5	Initial value: 1.0s. Range: 0.0-99.9s.
40222	00221	Result waiting timer t6	Initial value: 0.5s. Range: 0.0-99.9s
40223	00222	Discharge hold- ing timer t7	Initial value: 0.5s. Range: 0.0-99.9s.
40224	00223	Bag locked delay timer t8	Initial value: 0.5s. Range: 0.0-99.9s.
40225	00224	Bag unlocked delay timer t9	Initial value: 0.5s. Range: 0.0-99.9s.
40226	00225	Jogging feeding output ON/OFF	Initial value: 0. Range: 0-1 (0: OFF; 1: ON)
40227	00226	Jogging feeding output valid time ta	Initial value: 0.5s. Range: 0.0-99.9s.

40228	00227	Jogging feeding output invalid time tb	Initial value: 0.5s. Range: 0.0-99.9s.
40229	00228	Compensation times	Range: 0-9. Initial value: 0. (0 means OFF)
40230	00229	Compensation valid time tc	Initial value: 0.5s. Range: 0.0-99.9s.
40231	00230	Compensation invalid time td	Initial value: 0.5s. Range: 0.0-99.9s.
40232	00231	Auto free fall correction times	Initial value: 0. Range: 00-99 (0 means OFF)
40233	00232	Correction effective range	Range: 2.0. Range: 0.0-9.9. Unit: %.
40234	00233	Correction percentage	Initial value: 2, 0--100% correction. 1-7-5% correction. 2--50% correction. 3--25% correction.
40235	00234	Patting mode	Initial value: 0. 0: disable pat 1: only pat when filling 2: only pat after waiting 3: pat all time
40236	00235	Patting times (filling)	Initial value: 0. Range: 00-99.
40237	00236	Patting times(waiting)	Initial value: 4. Range: 00-99.
40238	00237	Pat start delay time	Initial value: 0.5s. Range: 0.0-99.9s.
40239	00238	Pat valid time	Initial value: 0.5s. Range: 0.0-99.9s. Output valid time when patting.
40240	00239	Pat invalid time	Initial value: 0.5s. Range: 0.0-99.9s. Output invalid time when patting.
40241	00240	Extra ON timer	Initial value: 0.5s. Range: 0.0-99.9s.
40242	00241	Continues filling times (single combination times)	Initial value: 1. Range: 00-99. Discharge times of bag unlocked when in with hopper mode. Completing filling, will discharge directly when it is 0.
40243	242	Over value(PLC)	4 bytes, non symbol.
40244	243		
40245	244	Under value(PLC)	4 bytes, non symbol.
40246	245		

40247	246	Upper limit value(PLC)	4 bytes, non symbol.
40248	247		
40249	248	Lower limit value(PLC)	4 bytes, non symbol.
40250	249		
40251	250	Upper limit output	4 bytes, 0 or 1
40252	251		
40253	252	Lower limit output	4 bytes, 0 or 1
40254	253		
40255	254	Sewing start delay	Initial value: 0.5s, range: 0.0~99.9s
40256	255	Sewing ON timer	Initial value: 4.0s, range: 0.0~99.9s
40257	256	Cutter ON timer	Initial value: 0.5s, range: 0.0~99.9s
40258	257	Sewing stop delay	Initial value: 0.5s, range: 0.0~99.9s
40259	0258	Hang UP Bag Delay	Initial value: 0.5; Range: 0~99.9 (unit:s)
40260	0259	Auto Hanger Switch	Initial value: 0; 1=on, 0=off
40261	0260	Delay Before Hanger Rise	Initial value: 5.0; Range: 0~99.9(unit:s)
40262	0261	Delay Before Hanger Drop	Initial value: 5.0; Range: 0~99.9 (unit:s)
40263	0262	Fan Rotating Time	Initial value: 0.5; Range: 0~99.9 (unit:s)
40264	0263	Hanger Reset Delay	Initial value: 0; Range: 0~99.9 (unit:s)
40265	0264	Start-Up Weight-1	Initial value: 0; Range: 0~full scale
40266	0265		
40267	0266	Patting Times-1(Filling)	Initial value: 0; Range: 0~99 Times set while filling
40268	0267	Start-Up Weight-2	Initial value: 0; Range: 0~full scale
40269	0268		
40270	0269	Patting Times-2(Filling)	Initial value: 0; Range: 0~99s

			Times set while filling
40271	0270	Cutting Machine Start Delay Timer	Initial value: 0.5, Range: 0~99 Cutting switch turn on effects, starts cutting delay timer.
40272 40300	0271 40299	Reserved	
Advanced Parameters			
40301	00300	Recipe ID	Range: 1-20.
40302	00301	Filling process filter	Initial value: 4. Range: 1-9.
40303	00302	Discharge process filter	Initial value: 3. Range: 1-9.
40304	00303	Waiting process filter	Initial value: 5. Range: 1-9.
40305	00304	Batch	Initial value: 0. Range: 1-9.
40306	00305	Waiting mode	Initial value: 1 (range: 0,1) 0: by stable status. 1: by delay timer.
40307	00306	Auto zero interval nos.	Initial value: 0. Range: 0-99. Zero operation after completing bagging. Not able to zero when set 0.
40308	00307	Running stable timeout	Initial value: 0.0s. Range: 0.0-99.9s.
40309	00308	OVER/UNDER ON/OFF	Initial value: 0. 1: ON. 0: OFF.
40310	00309	OVER/UNDER pause	Initial value: 0. 1: ON. 0: OFF.
40311	00310	Manual discharge add to total	Initial value: 0. 1: ON. 0: OFF.
40312	00311	Final weight holding	Initial value: 0. 1: ON. 0: OFF.
40313	00312	Coding device ON/OFF	Initial value: 0. 1: ON. 0: OFF.
40314	00313	Coding start delay timer TP1	Initial value: 0.5s. Range: 0.0-99.9s.
40315	00314	Coding duration timer TP2	Initial value: 0.5s. Range: 0.0-99.9s.
40316	00315	Not allowed fill or discharge	Initial value: OFF (0) ON: not allowed to fill or discharge when coding.

		when coding	OFF: turn off.
40317	00316	Gross and net option in non-hopper mode	Initial value: 1. (Net weight) 0: Non-hopper gross weight mode. (Filling after bag locked) 1: Non-hopper net weight mode. (Filling after stable, then begin to fill.)
40318	00317	Discharge mode	Default value: 0. 0: discharge directly. 1: allow discharge.
40319 40400	00318 00399	Reserved	
Recipe Target Value Parameters			
40501	00500	Recipe1 target value	Initial value: 0.
40502	00501		
40503	00502	Recipe2 target value	Initial value: 0.
40504	00503		
40505	00504	Recipe3 target value	Initial value: 0.
40506	00505		
40507	00506	Recipe4 target value	Initial value: 0.
40508	00507		
40509	00508	Recipe5 target value	Initial value: 0.
40510	00509		
40511	00510	Recipe6 target value	Initial value: 0.
40512	00511		
40513	00512	Recipe7 target value	Initial value: 0.
40514	00513		
40515	00514	Recipe8 target value	Initial value: 0.
40516	00515		
40517	00516	Recipe9 target value	Initial value: 0.
40518	00517		
40519	00518	Recipe10 target value	Initial value: 0.
40520	00519		

40521	00520	Recipe11 target value	Initial value: 0.
40522	00521		
40523	00522	Recipe12 target value	Initial value: 0.
40524	00523		
40525	00524	Recipe13 target value	Initial value: 0.
40526	00525		
40527	00526	Recipe14 target value	Initial value: 0.
40528	00527		
40529	00528	Recipe15 target value	Initial value: 0.
40530	00529		
40531	00530	Recipe16 target value	Initial value: 0.
40532	00531		
40533	00532	Recipe17 target value	Initial value: 0.
40534	00533		
40535	00534	Recipe18 target value	Initial value: 0.
40536	00535		
40537	00536	Recipe19 target value	Initial value: 0.
40538	00537		
40539	00538	Recipe20 target value	Initial value: 0.
40540	00539		
40541 40600	00540 00599	Reserved	
Total Recipes			
40601	00600	Recipe1 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40602	00601		
40603	00602	Recipe1 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40604	00603		
40605	00604	Recipe2 total	Recipe total PCS. and weight will be cleared when

40606	00605	weight	write 0 in.
40607	00606	Recipe2 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40608	00607		
40609	00608	Recipe3 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40610	00609		
40611	00610	Recipe3 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40612	00611		
40613	00612	Recipe4 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40614	00613		
40615	00614	Recipe4 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40616	00615		
40617	00616	Recipe5 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40618	00617		
40619	00618	Recipe5 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40620	00619		
40621	00620	Recipe6 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40622	00621		
40623	00622	Recipe6 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40624	00623		
40625	00624	Recipe7 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40626	00625		
40627	00626	Recipe7 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40628	00627		
40629	00628	Recipe8 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40630	00629		
40631	00630	Recipe8 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40632	00631		
40633	00632	Recipe9 total	Recipe total PCS. and weight will be cleared when

40634	00633	weight	write 0 in.
40635	00634	Recipe9 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40636	00635		
40637	00636	Recipe10 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40638	00637		
40639	00638	Recipe10 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40640	00639		
40641	00640	Recipe11 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40642	00641		
40643	00642	Recipe11 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40644	00643		
40645	00644	Recipe12 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40646	00645		
40647	00646	Recipe12 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40648	00647		
40649	00648	Recipe13 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40650	00649		
40651	00650	Recipe13 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40652	00651		
40653	00652	Recipe14 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40654	00653		
40655	00654	Recipe14 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40656	00655		
40657	00656	Recipe15 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40658	00657		
40659	00658	Recipe15 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40660	00659		
40661	00660	Recipe16 total	Recipe total PCS. and weight will be cleared when

40662	00661	weight	write 0 in.
40663	00662	Recipe16 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40664	00663		
40665	00664	Recipe17 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40666	00665		
40667	00666	Recipe17 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40668	00667		
40669	00668	Recipe18 total weight	Total PCS. and weight will be cleared when write 0 in.
40670	00669		
40671	00670	Recipe18 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40672	00671		
40673	00672	Recipe19 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40674	00673		
40675	00674	Recipe19 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40673	00675		
40677	00676	Recipe20 total weight	Recipe total PCS. and weight will be cleared when write 0 in.
40678	00677		
40679	00678	Recipe20 total PCS.	Recipe total PCS. and weight will be cleared when write 0 in.
40680	00679		
40681	00680	User0 total weight	User total PCS. and weight will be cleared when write 0 in.
40682	00681		
40683	00682	User0 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40684	00683		
40685	00684	User1 total weight	User total PCS. and weight will be cleared when write 0 in.
40686	00685		
40687	00686	User1 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40688	00687		
40689	00688	User2 total	User total PCS. and weight will be cleared when

40690	00689	weight	write 0 in.
40691	00690	User2 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40692	00691		
40693	00692	User3 total weight	User total PCS. and weight will be cleared when write 0 in.
40694	00693		
40695	00694	User3 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40696	00695		
40697	00696	User4total weight	User total PCS. and weight will be cleared when write 0 in.
40698	00697		
40699	00698	User4 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40700	00699		
40701	00700	User5total weight	User total PCS. and weight will be cleared when write 0 in.
40702	00701		
40703	00702	User5 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40704	00703		
40705	00704	User6total weight	User total PCS. and weight will be cleared when write 0 in.
40706	00705		
40707	00706	User6 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40708	00707		
40709	00708	User7total weight	User total PCS. and weight will be cleared when write 0 in.
40710	00709		
40711	00710	User7 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40712	00711		
40713	00712	User8total weight	User total PCS. and weight will be cleared when write 0 in.
40714	00713		
40715	00714	User8 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40716	00715		
40717	00716	User9total weight	User total PCS. and weight will be cleared when

40718	00717		write 0 in.
40719	00718	User9 total PCS.	User total PCS. and weight will be cleared when write 0 in.
40720	00719		
I/O Function Parameter			
40801	00800	IN1	0: Non 1: Start 2: Stop 3: Emergency stop 4: Zero 5: Clear alarm 6: Change recipe 7: Discharge request 8: DISC gate closed 9: Supplement full 10: Supplement OK 11: Supplement empty 12: Interlock input 13: Manual discharge 14: Manual coarse flow 15: Manual fine flow 16: Start single loop 17: Bag lock/unlock request 18: Bag locked 19: Start/Stop switch 20: Start/E-Stop switch 21: Print all total
40802	00801	IN2	
40803	00802	IN3	
40804	00803	IN4	
40805	00804	IN5	
40806	00805	IN6	
40807	00806	IN7	
40808	00807	IN8	
40809	00808	OUT1	0: Non 1: Running 2: Stopped 3: Coarse flow 4: Medium flow 5: Fine flow 6: Result waiting 7: Ready 8: Discharge 9: OVER/UNDER 10: Alarm 11: Filling supplement 12: Supplement empty 13: (-NZ-) 14: Batch complete
40810	00809	OUT2	
40811	00810	OUT3	
40812	00811	OUT4	
40813	00812	OUT5	
40814	00813	OUT6	
40815	00814	OUT7	
40816	00815	OUT8	
40817	00816	OUT9	
40818	00817	OUT10	

40819	00818	OUT11	15: Coding 16: Interlock output 17: Bag lock 18: Pat bag
40820	00819	OUT12	
40821	00820	Output test	Note: Write: Only allow to write in when switch on. Accordingly match with OUT1 to OUT12. “1” is effective output and “0” is ineffective. Read: Exit.
40822	00821	Input test	Write: Not allowed to write in. Read: Accordingly match with IN1 to IN8. “1” is effective output and “0” is ineffective. (When switch is ON)
40823 40970	00822 00969	Reserved	
40971	0970	MODBUS Hi-Lo	MODBUS Hi-Lo order setting.
40972	0971	Port ID no.	Range: 1-65534
40973	0972	IP address 1	Initial value: 192.168.101.246
40974	0973	IP address 2	
40975	0974	IP address 3	
40976	0975	IP address 4	
40977	0976	MAC address 1	BC 66 41 9* ** **, only allow to revise last three digit.
40978	0977	MAC address 2	
40979	0978	MAC address 3	
40980	0979	MAC address 4	
40981	0980	MAC address 5	
40982	0981	MAC address 6	
40983	0982	Additional board type	Only for debugging.
Bits Only Read (Function code: 0x01)			
00001	00000	OFF: Stop; ON: Running	
00002	00001	OFF: Unstable; ON: Stable	
00003	00002	OFF: Normal; ON: Over	
00004	00003	OFF: Positive; ON: Negative (symbol of present weight)	
00005	00004	OFF: Non-zero; ON: Zero	
00006	00005	Reserved.	

.... 00016	 00015		
Bits allowed Read and Write (Function code of read: 0x01. Write: 0x05)			
00017	00016	Power-Up zero ON/OFF // Writing is invalid when running.	
00018	00017	Over/Under ON/OFF // Writing is invalid when running.	
00019	00018	Over/under pause// Writing is invalid when running.	
00020	00019	Jog flow output ON/OFF	
00021	00020	Auto print// Writing is invalid when running.	
00022 00031	00021 00030	Reserved	
00032	00031	All recovery(not including calibration)	
00033	00032	All recovery	
00034	00033	Calibration parameter recovery	
00035	00034	Basic parameter recovery	
00036	00035	Recipe parameter recovery	
00037	00036	I/O function recovery	
00038	00037	Advanced parameter recovery	
00039	00038	Optimal parameter back-up	
00040	00039	Optimal parameter recovery	
00041 00045	00040 00044	Reserved	
00046	00045	Start	
00047	00046	Stop	
00048	00047	Emergency stop	
00049	00048	Zero	Ineffective when write in running.
00050	00049	Clear alarm	
00051	00050	Manual discharge	Ineffective when write in running.
00052	00051	Manual fine flow	
Effective when write in ON and ineffective when write in OFF. It will show ON/OFF status when ready.			
Effective when write in ON and ineffective when write in OFF. If read OFF, writing in only valid when stop.			
Impulse input. Effective when write in ON and ineffective when write in OFF. OFF when read.			

00053	00052	Manual coarse flow		
00054	00053	Single running (manual filling)		
00055	00054	Clear all total recipes		
00056	00055	Clear present total recipes		
00057	00056	Gross / Net weight change		ON: Net weight; OFF: Gross weight.
00058	00057	Bag lock / unlocked request		
00059	00058	Clear all user total		
00060	00059	Clear present user total		
00062	00061	Hanging Request		1: Hang bag; 0: release bag;
00063	00062	Manual Hanger Up/Down		1: Hanger Up; 0: Hanger down;
00064	00063	Allow Filling		
00065	00064	Pause		Pulse input type, write ON valid, OFF invalid. Read out OFF
00066	00065	Write ON valid, OFF invalid. read out OFF		
00067	00066	Write ON valid, OFF invalid. read out ON		
00068	00067	Write ON valid, OFF invalid.		
00069	00068	Write ON valid, OFF invalid.		
00070 00080	00069 00079	Reserved		
00081	00080	I/O test ON/OFF: Enter I/O test when writing in ON and exit when write in OFF. Not allow to write in when running.		
00082	00081	It will read ON when IN1 is effective, if ineffective, and then read OFF.		Ineffective when writing in.
00083	00082	It will read ON when IN2 is effective, if ineffective, and then read OFF.		
00084	00083	It will read ON when IN3 is effective, if ineffective, and then read OFF.		
00085	00084	It will read ON when IN4 is effective,		

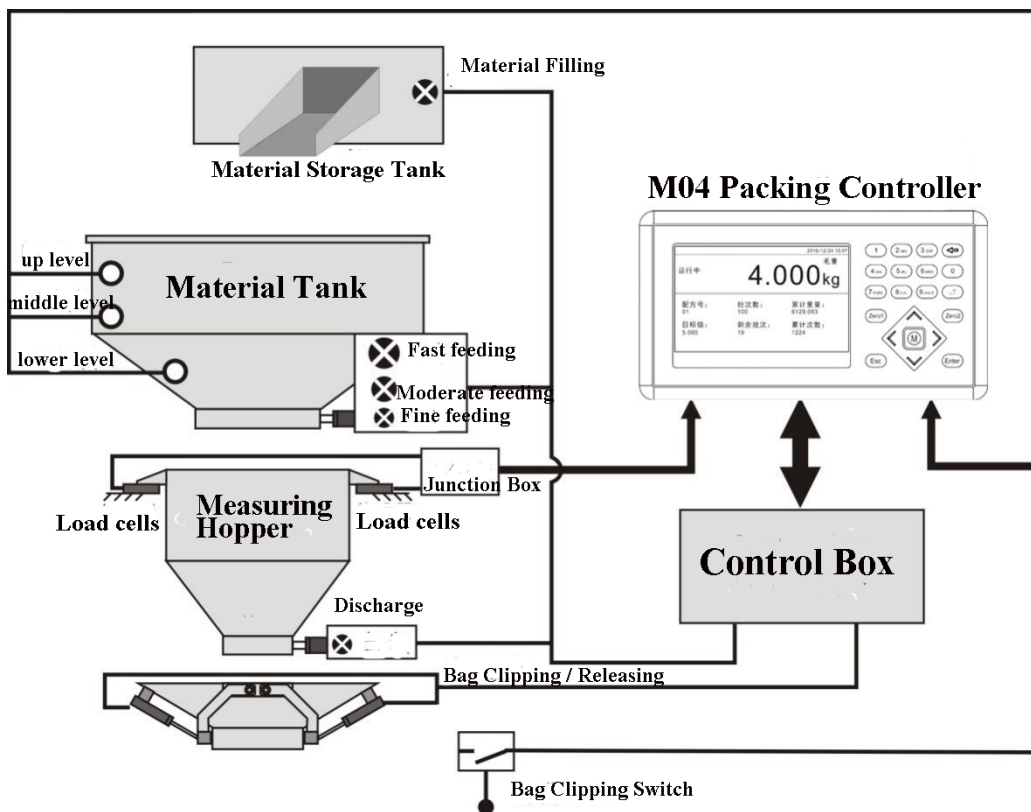
		tive, if ineffective, and then read OFF.	
00086	00085	It will read ON when IN5 is effective, if ineffective, and then read OFF.	
00087	00086	It will read ON when IN6 is effective, if ineffective, and then read OFF.	
00088	00087	It will read ON when IN7 is effective, if ineffective, and then read OFF.	
00089	00088	It will read ON when IN8 is effective, if ineffective, and then read OFF.	
00090	00089	OUT1 is effective when write in ON, and it is ineffective when write in OFF.	
00091	00090	OUT2 is effective when write in ON, and it is ineffective when write in OFF.	
00092	00091	OUT3 is effective when write in ON, and it is ineffective when write in OFF.	
00093	00092	OUT4 is effective when write in ON, and it is ineffective when write in OFF.	
00094	00093	OUT5 is effective when write in ON, and it is ineffective when write in OFF.	
00095	00094	OUT6 is effective when write in ON, and it is ineffective when write in OFF.	
00096	00095	OUT7 is effective when write in ON, and it is ineffective when write in OFF.	
00097	00096	OUT8 is effective when write in ON, and it is ineffective when write in OFF.	
00098	00097	OUT9 is effective when write in ON, and it is ineffective when write in OFF.	
00099	00098	OUT10 is effective when write in ON, and it is ineffective when write in OFF.	
00100	00099	OUT11 is effective when write in ON, and it is ineffective when write in OFF.	
00101	00100	OUT12 is effective when write in ON, and it is ineffective when write in OFF.	

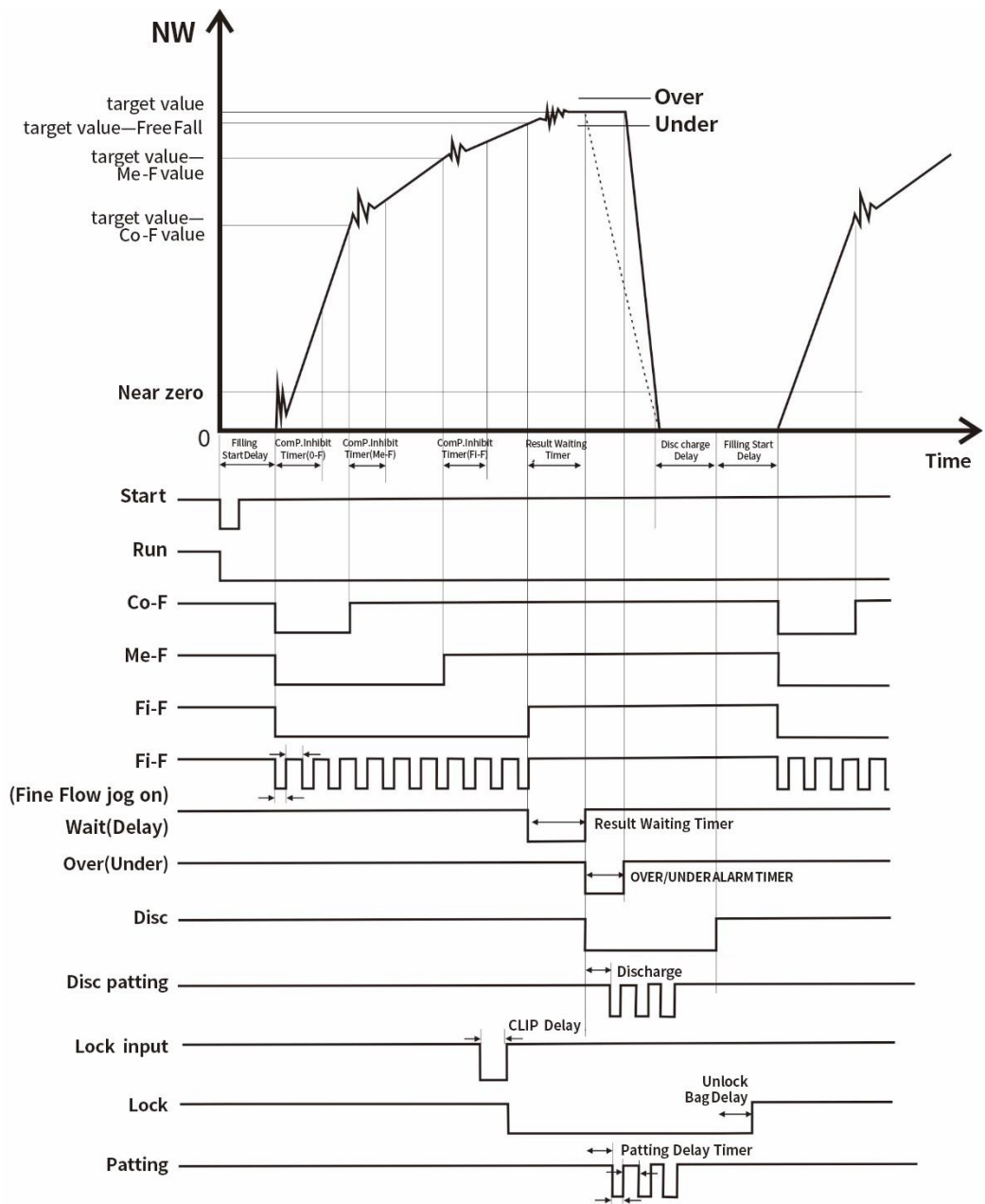
7. Automatic Bagging

M04 packaging controller can automatically control all the packaging processes of coarse, medium and fine feeding and unloading under the state of automatic packaging. Support bucket, no bucket scale body structure, single scale, A scale interlock, B scale interlock mode is optional. The scale structure and scale mode are selected from the working parameters.

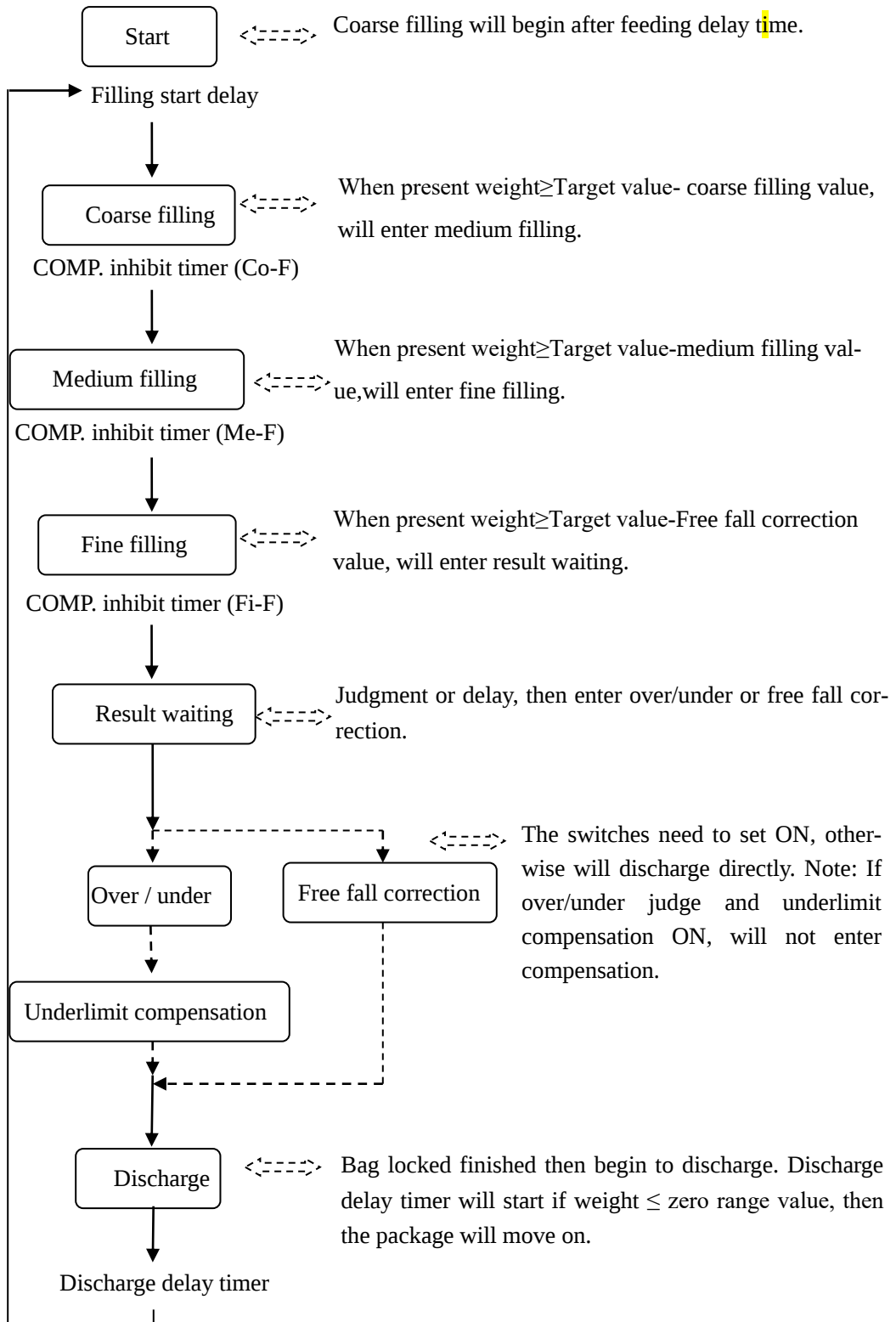
7.1 With Hopper Mode Packaging

The following sketch map indicates the bagging process with hopper:



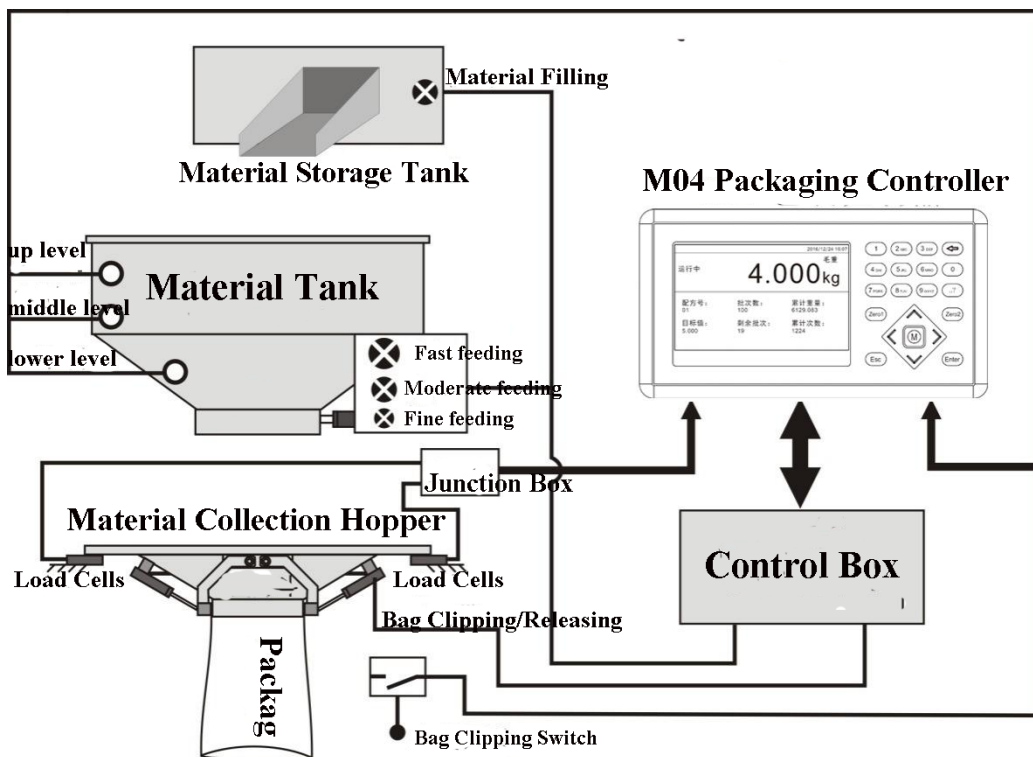


Description of the process

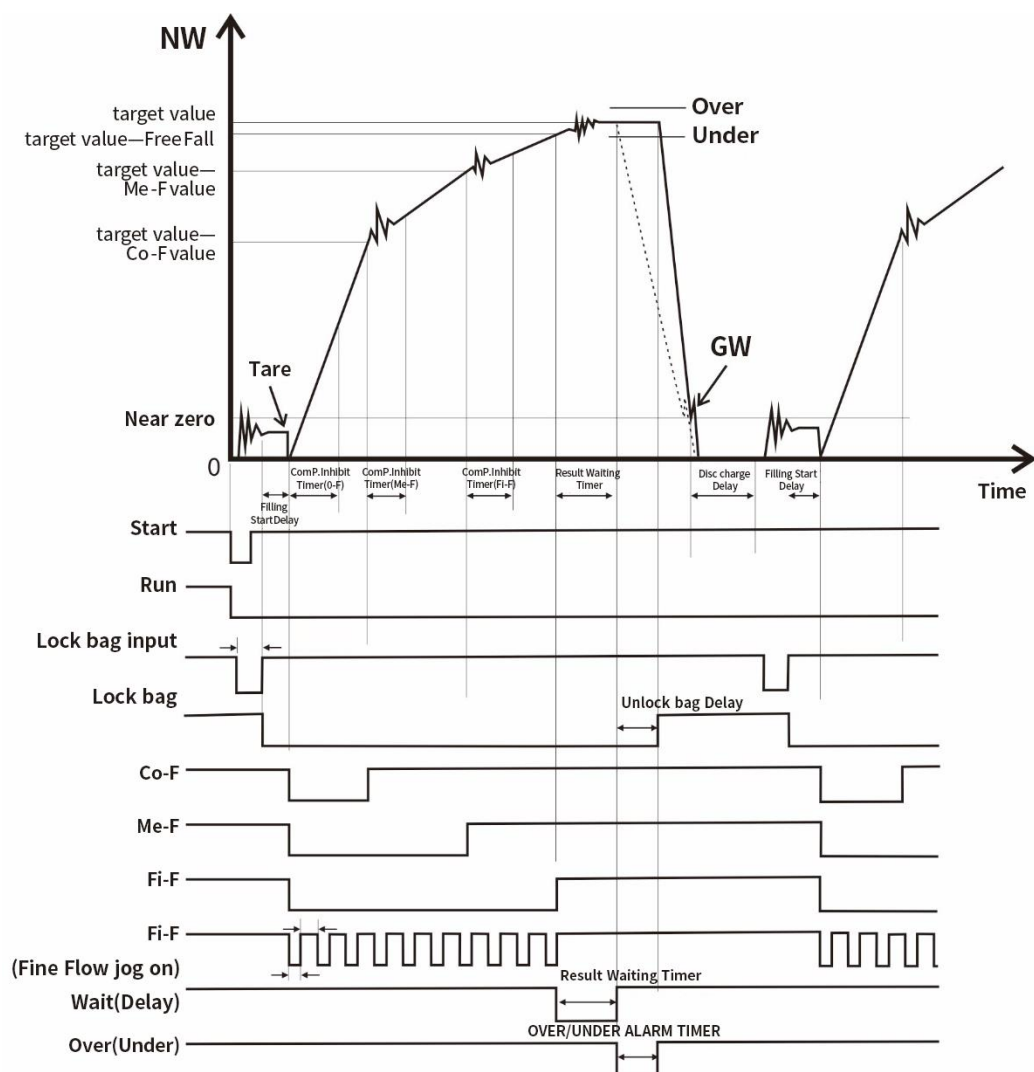


7.2 Without Hopper Mode Packaging

The following sketch map indicates the bagging process without hopper:

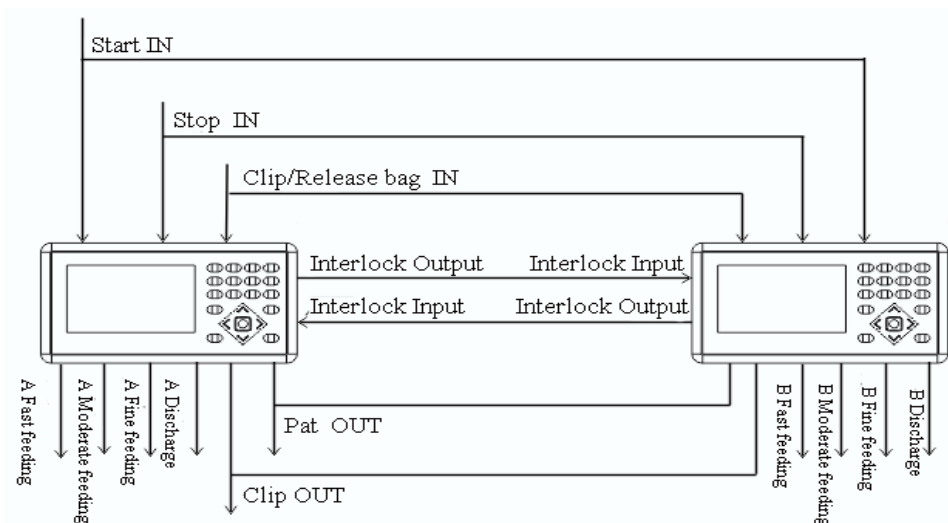


For without weighing hopper mode, the load cell is installed over material collection hopper, which is the main difference from with hopper mode. Start feeding after finishing bag lock.



7.3 Dual Hoppers Interlock Mode Packaging

The user can use two indicators to pack at interlock mode: Scale A interlock and Scale B interlock. Two weighing hoppers, one nipping machine as following:



For interlock mode with two hoppers, user need set target value of Scale A and Scale B, including coarse flow, medium flow, fine flow and so on. Then the indicator will control the whole process separately, such as filling speed, discharging and bag unlocked. First result waiting, then will discharge first.

- Bag lock

With hopper: If the lock bag signal effective, will begin to discharge after bag lock delay time. Scale A and Scale B, which first fix value, then will discharge first. If one is discharging, then the other one have to wait till next effective signal for locking bag, so begin to discharge.

Without hopper: When get effective lock bag signal, it will lock bag after bag lock delay time. Then begin to feeding delay time. After that, proceed stable weighing, tare, change gross weight status into net weight status for feeding.

- Unlock bag

With hopper: After the weight value is lower than near-zero value and discharge delay timer will start. The indicator will close discharging and release bag after release delay time.

Without hopper: After result waiting within bag unlocked delay timer, it will release bag automatically.

7.4 PLC Mode

In PLC mode, the main display state of the controller is changed to: Coarse Flow, Medium Flow, Fine Flow, over, under, upper limit, lower limit, and zero.

When the target value - Coarse Flow Remains >weighing value, Coarse, Medium and fine flow output is valid, and the Coarse Flow, Medium Flow, Fine Flow displayed on the main interface are red.

When the target value - Medium Flow Remains >weighing value, Medium and fine flow

output is valid, and the Medium Flow, Fine Flow displayed on the main interface are red.

When the target value - Free Fall > weighing value, fine flow output is valid, and the Fine Flow displayed on the main interface are red.

When the weight value > target value + Over Limit Value, Over Limit Value output is valid, and the displayed on the main interface is red.

When the weigh value < target value – Under Limit Value, Under Limit Value output is valid, and the displayed on the main interface is red.

When the weight value > upper limit, upper limit output is valid, the upper limit is red on the main interface.

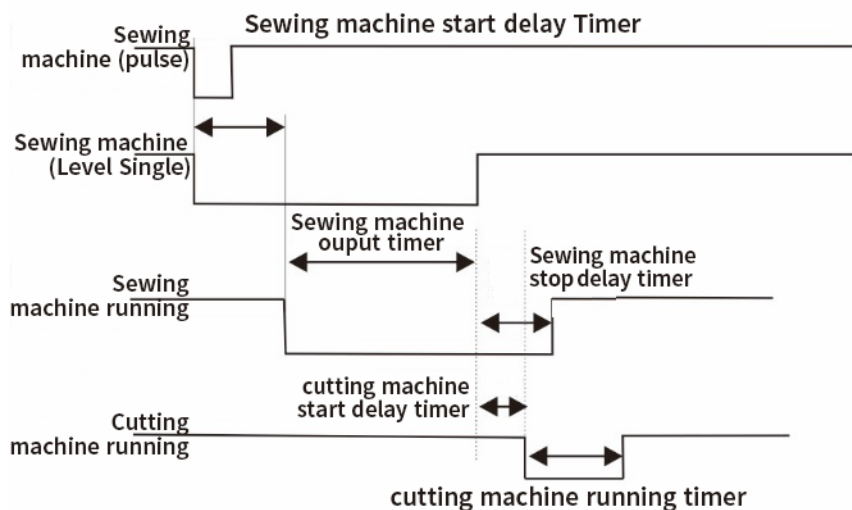
When the weight value < lower limit, lower limit output is valid, the lower limit is red on the main interface.

When the weight value < Near Zero Band, Near Zero Band output is valid, Near Zero Band is red on the main interface.

7.5 Sewing Process

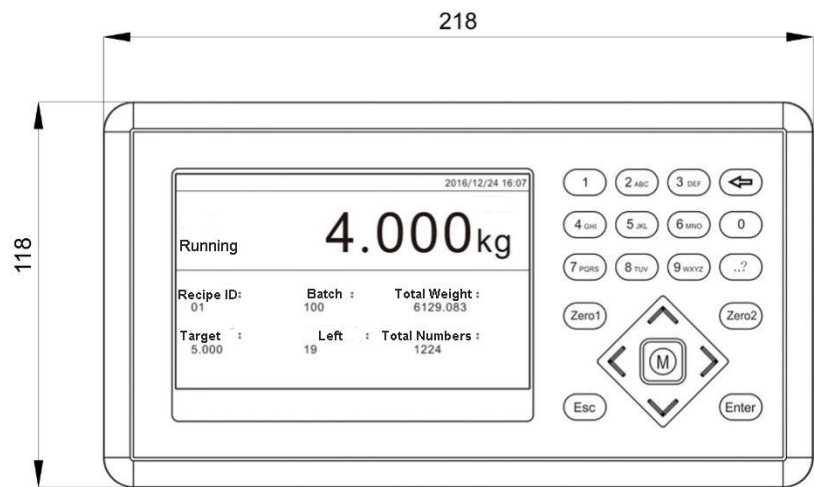
Sewing start delay begins when sewing switch sets ON, and then sewing begin to work after delay timer completed. After sewing output time completed, cutter start to work, both of them are working at the same time. Cutter stops to work when cutter output time ends, but sewing continues running.

In the process of sewing machine, if the emergency stop switch of I27 sewing machine is effective, the sewing process will stop.

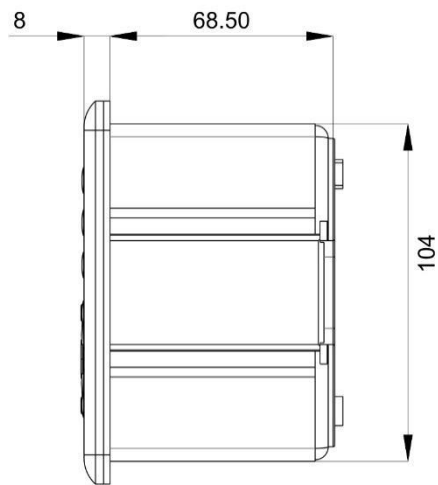


8. Dimension

Front size



Side size



Rear size

