

M04

User's Manual



M04-00160701

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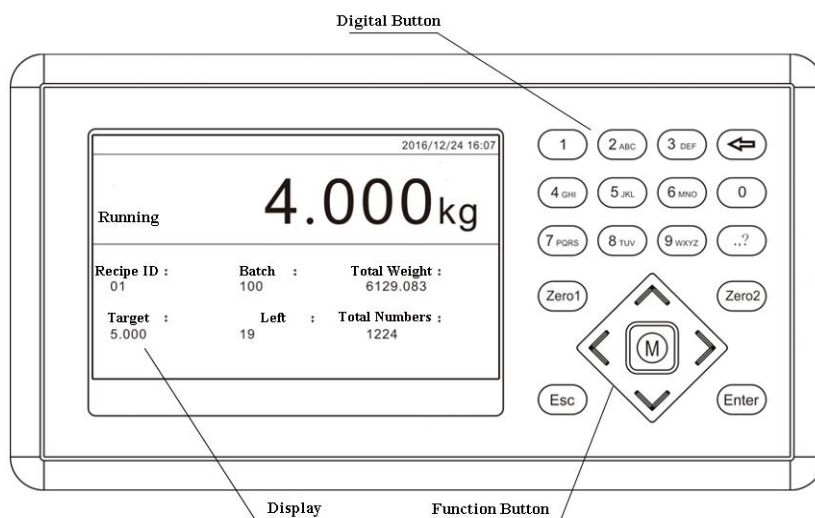
1. General Description

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
- 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 data 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.

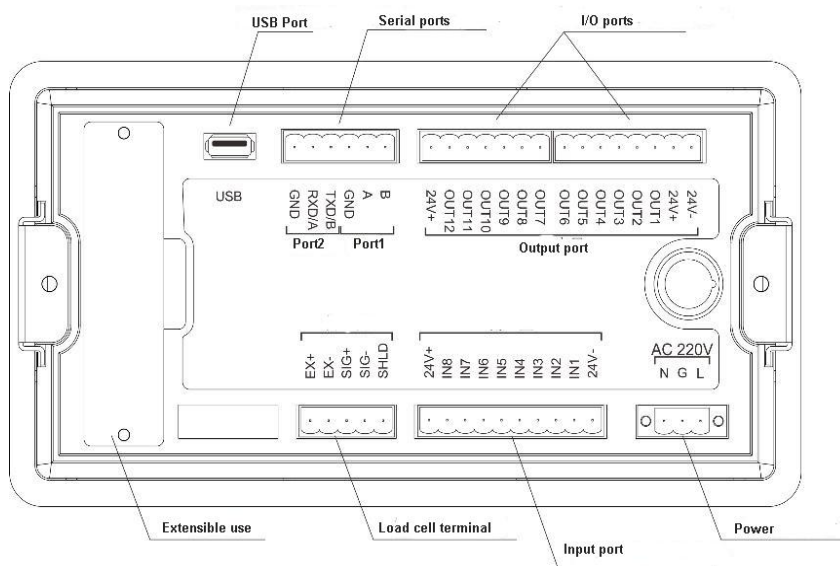
【ZERO2】 Check and set parameter accordingly by shortcut button.(Need admittance.)

【M】 Set parameters

【ESC】 Exit and return to main menu.

【ENTER】 Confirm status.

1.3Rear Panel Description



1.4 Specification

1.4.1 Total Specification

Power Supply: **AC100V-240V 50Hz/60Hz±2%**

Power Supply Filter: **Installed inside.**

Working Temperatures : **-10~ 40℃**

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

Power: **15W**

Dimension: **225×100×120mm**

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/℃**

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

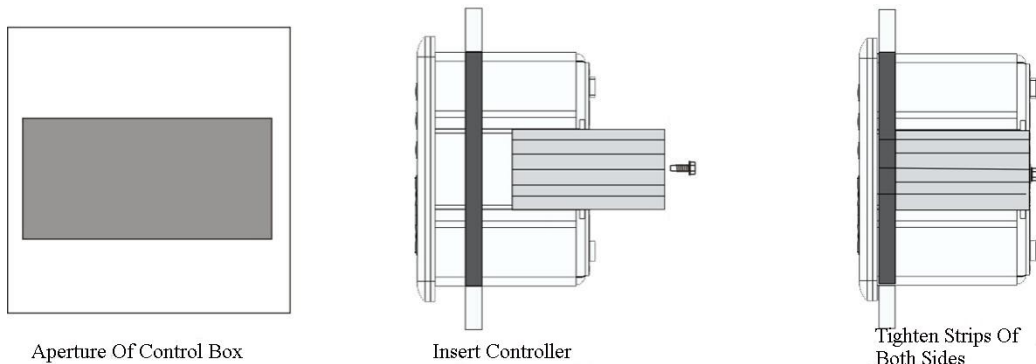
M04 packing controller uses AC100V-240V 50Hz/60Hz±2% power supply with grounding to guarantee the safety of the controller and other equipment connected.

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 screw holes 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.

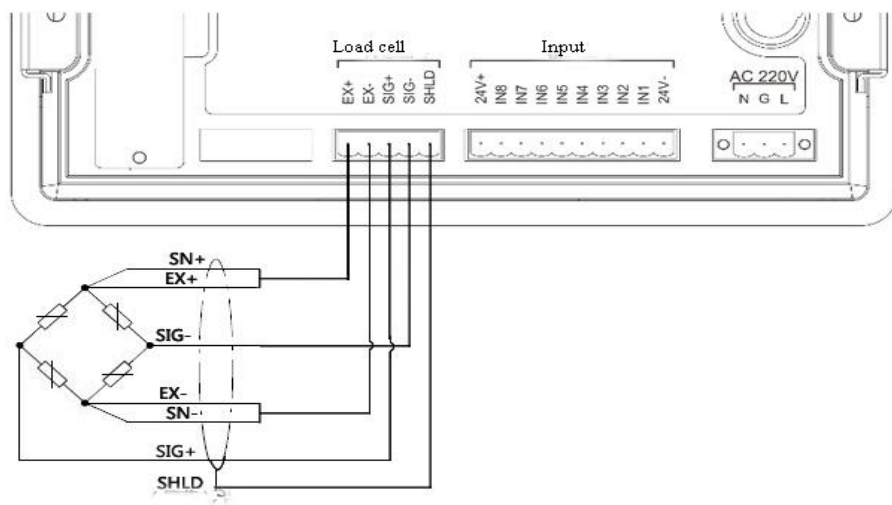


2.2 Load Cell Connection

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.

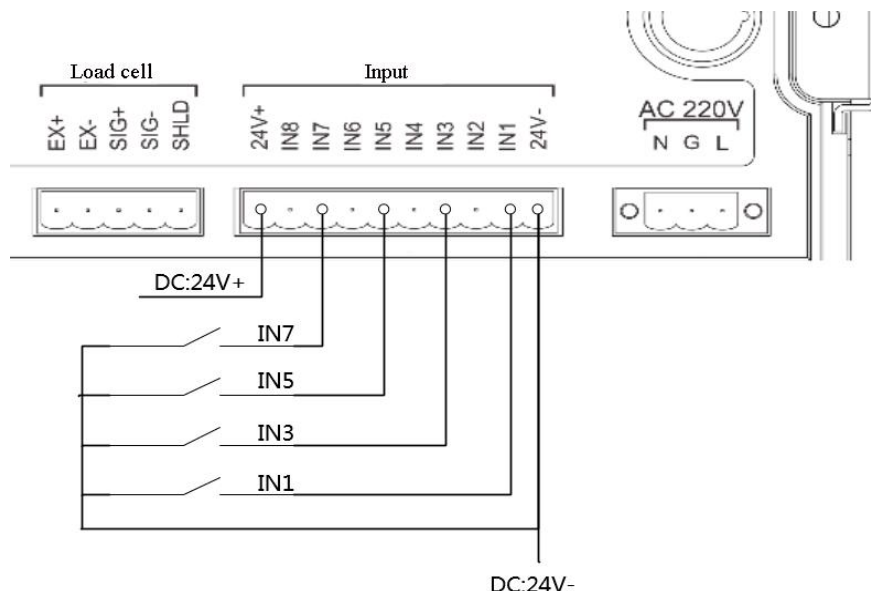


Figure: Input Schematics(Take IN1,IN3,IN5,IN7 for example)

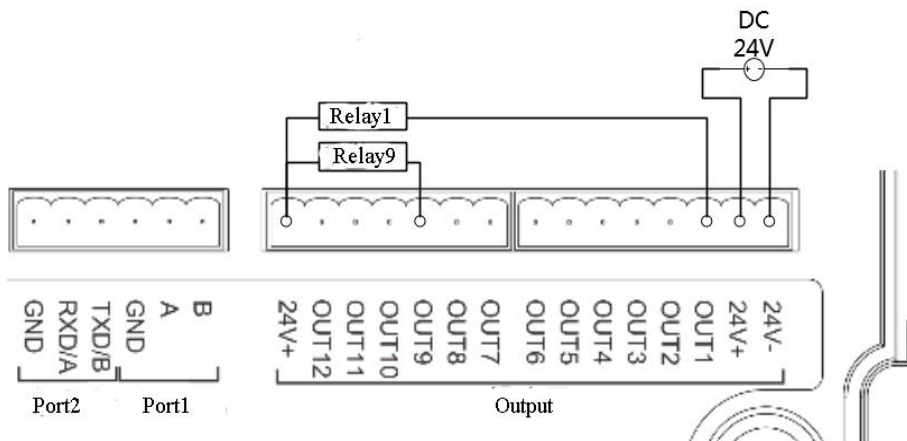


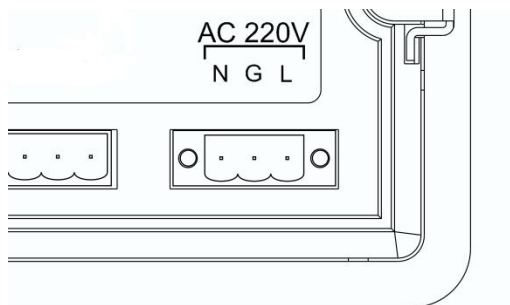
Figure: Output Schematics(Take OU1, OUT9 for example)

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

2.4Power Supply Connection

M04 packing controller uses AC100V-240V 50Hz/60Hz $\pm$ 2% power supply with

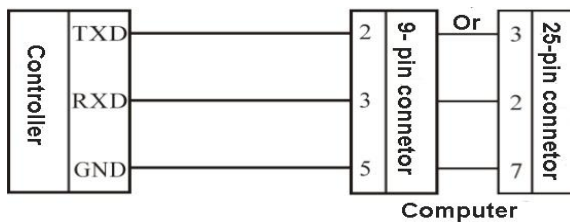
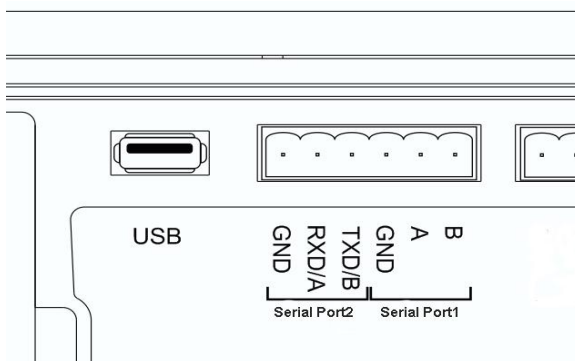
grounding. The Correct connections are depicted below.



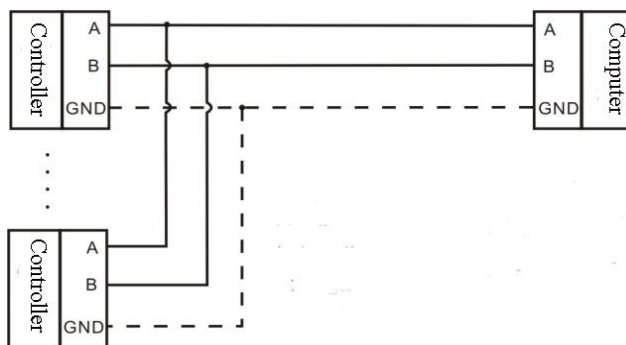
Power Supply Connector: L-Live Wire G-Ground Wire N-Null Wire

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)

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:

Permissi on	Operation
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.
Technici an	Not allow to revise weigher structure parameter in Working parameter.
	Not allow to or set shortcut define.

- ◆ 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.

Description	
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	
Total	
I/O Module	Recipe ID: 01
Communication	Target: 0kg
System Info	Button:1-Edit Recipe ID
Items	Information

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 parameter	Result waiting	Result waiting setting
		Result waiting timer	Result waiting timer setting
		Overlimit / underlimit	Over/under weight and way parameters setting
		Free fall correction	Free fall correction and other parameters setting
		Fine flow inching	Fine flow inching mode setting
		Under-compensation	Compensation filling parameter setting
		Pat parameters	Pat time and method setting
		Other parameters	Single hopper combination Nos setting
	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
	Total	Recipes list	Read, clear, print recipe information
	I/O Module	Output define	Define output port
		Input define	Define input port
		IO test	Test port connection
	Serial port parameter	RS485	Serial port1(RS485) parameter setting
		Optional RS232/RS485	Serial port2(RS232/RS485) parameter setting.Communication mode refers to 2.5
		Serial port option	Serial port3(optional) setting, but still not open.
		Printing parameter	Printing parameter setting
	System info.	User administration	User password administration
		Password administration	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 input	Input working parameter, recipes parameter,calibration parameter and others parameter.
		USB data output	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.
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4.1 System 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 administration	1.User login	User ID. (Not allow to edit)
	2.Permission setting	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 administration	1.Recipe parameter 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 password	
	5.System information password	
Recover/back up	1. All parameters initializing	Press 【ENTER】 will initialize all parameters.
	2. Calibration parameter	Press 【ENTER】 will initialize calibration parameter.

	initializing		
	3.Basic parameter initializing	Press 【ENTER】 will initialize fundamental parameter.	
	4.Recipe parameter initializing	Press 【ENTER】 will initialize recipe parameter.	
	5.I/O module define initializing	Press 【ENTER】 will initialize I/O module define.	
	6. Advanced parameter initializing	Press 【ENTER】 will initialize high rank parameter.	
	7. Shortcut define initializing	Press 【ENTER】 will initialize shortcut define.	
	8.Execute parameter back up	Press 【ENTER】 will back up current parameters.	
	9.Data recover/back up	Press 【ENTER】 will recover parameter as back up data.	
	USB data input	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 parameter		Input I/O parameter through USB.	
6.Serial port parameter		Input serial port parameter through USB.	
USB data output	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 parameter	Output I/O parameter through USB.	
	6.Serial port parameter	Output serial port parameter through USB.	
Shortcut	1.Digit-1	Initial value:recipe	Press 【ENTER】 to

setting		parameter	define shortcut.
	2.Digit-2	Initial value:working parameter	【◀】 & 【▶】 :Turn pages.
	3.Digit-3	Initial value:calibration	
	4.Digit-←	Initial value:batch	
	5. Digit-4	Initial value:total	
	6.Digit-5	Initial value:I/O module	
	7.Digit-6	Initial value:serial port parameter	【▲】&【▼】:Select functional parameter value
	8.Digit-0	Initial value:user login	
	9.Digit-7	Initial value:system info.	
	10.Digit-8	Initial value:recipe ID	
	11.Digit-9	Initial value:target value	
	12.Digit-.,?	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,

- ◆ 【◀】 & 【▶】 :Exchange calibration parameter.
- ◆ 【▲】 & 【▼】 :Select parameter items.
- ◆ 【ENTER】 :Enter and edit parameter.
- ◆ 【ESC】 :Exit.

Calibrati	Calibration	Description
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on paramete r	items		
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.Load cell sensitivity	Initial value: 2mV/V . Three types: 1~3mV/V .	
	4.Mini scale division	Initial value:1. Six types: 1/2/5/10/20/50 .	
	5.Max scale range	Initial value: 10.000 . $\leq$ Min. Scale Division $\times$ 100000	
Zero calibration	Present weight	Display present weight value.	Press 【ENTER】 to set zero point with clearing weighing hopper.
	Present voltage	Display the present output voltage of load cell	
Weight calibration	Present weight	Display present weighing value	Adding weight and inputting weighing value to finish calibration.
	Relative voltage value	Display output voltage value with weight	

4.3 Working Parameter

The working parameter interface showed:

- ◆ **【◀】 & 【▶】**:Switch working parameter.
- ◆ **【▲】 & 【▼】**:Switch items of working parameter.
- ◆ Press **【ENTER】** button, can enter and edit parameters.
- ◆ Press **【ESC】** button, exit.

Working paramete r 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 best 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.A/D 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	Discharge directly:the controller will discharge directly

	mode	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 parameter	1. Coding device ON/OFF	Option: ON/OFF.ON: Printing. Initial value: OFF.
	2.Coding start delay timer	Printing after clipping 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	With weighing hopper and without weighing hopper
	2.Working mode	Option:Single hopper/Scale A interlock/Scale B interlock; Initial value: Single hopper.
	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: 0~99.9 seconds.
	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	
Total	
I/O Module	Recipe ID: 01
Communication	Target: 0kg
System Info	Button:1-Edit Recipe ID

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:

- ◆ **【◀】 & 【▶】** Changing recipe parameter.
- ◆ **【▲】 & 【▼】** Changing items of recipe parameter.
- ◆ **【ENTER】** : Entering and editing item recipe parameter.
- ◆ **【ESC】** Exit.

Recipe parameter	Parameters	Description
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item		
Value	Weighing value parameter setting.	
	1.Target	Target value setting.
	2.Coarse flow	When present weight $\geq$ Target value-Coarse flow value, and then shutoff coarse flow filling.
	3.Medium flow	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/un der	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 correctio n	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 compens ation	Under limit compensation parameter setting.	
	1.Compensati on 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 paramete rs	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.
Other paramete rs	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.)
	1.Filling combination times	With hopper mode: Bag unlocked after discharging. If 0, discharge directly after filling whether nip bag or not.

4.5 Communication Setting

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

Description:

- ◆ **【◀】 & 【▶】** 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
Communi cation (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 language	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	Run	IN1	Start
OUT2	Stop	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	Interlock input
OUT9	Bag lock		
OUT10	Pat bag		
OUT11	Batch complete		
OUT12	Interlock output		

4.6.1 Output define and Input define.

User can define output port and input port. Setting as below:

- ◆ **【◀】 & 【▶】** 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	
Items	Description
Run	Output define signal is effective when running.
Stop	Output define signal is effective when stop.
Coarse filling	Effective when present weight value< target value – the leading quantity of coarse filling .
Medium filling	Effective when present weight value< target value – the leading quantity of medium filling .

Fine filling	Effective when present weight value< target value – free fall value.
Result waiting	After feeding finished and before discharging or patting bag.
Ready	Effective when fixed value finished.
Discharge	Control to discharge after starting.
Over/Under	Effective when over/under.
Alarm	Alarm for over/under, batch completed and so on.
Filling supplement	Control to fill material. When the under level input ineffective, the filling output effective; when the upper level input effective, the filling output ineffective.
Supplement empty	When the under level input ineffective, the filling output effective.
(-NZ-)	Effective when present weight is less than near-zero value.
Batch complete	Effective when batching times finished.
Coding	Effective when coding output.
Interlock output	Only used in dual hoppers mode, connecting to interlock input of the other indicator.
Bag lock	Effective signal to clip bag and ineffective signal to release bag.
Pat bag	Control to pat bag.
Conveyor start	Control conveyor start and stop in without hopper mode. The signal is effective to start conveyor and ineffective to stop conveyor.
Input	
Start	Run status when impulse input is effective.
Stop	Return to stop status after finish bagging when impulseinput is effective.
Emergency stop	Stop status when impulse input is effective.
Zero	Zero gross weight when impulse input is effective.
Clear alarm	Clear alarm when impulse input is effective.
Select recipe	Recipe no will add 1 when input one time. If target of recipe is 0, pass to next recipe.
Discharge request	Effective after result waiting settled.

DISC gate closed	Bag lock completed when effective.
Supplement full	Level input for upper level of material hopper.
Middle level	Level input for middle level of material hopper.
Under level	Level input for under level of material hopper.
Interlock input	Interlock mode for two indicators used in one system.
Manual discharge	Input one time for discharge, again to stop discharge.
Manual coarse flow	Input one time for fast feeding, again to stop fast feeding.
Manual fine flow	Input one time for fine feeding, again to stop fine feeding.
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.
Bag lock/unlock request	Exchange to bag lock and unlock.
Bag locked	Effective when bag locked.
Start/stop switch	Effective signal to run ; ineffective signal to stop after finishing packing.(Level signal)
Start/emergency stop switch	Effective signal to run; ineffective signal to stop.(Level signal)
Print all total	Effective in stop status.

4.6.2IO 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.

- ◆ **【◀】 & 【▶】** 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:

Supplement full	Supplement 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.

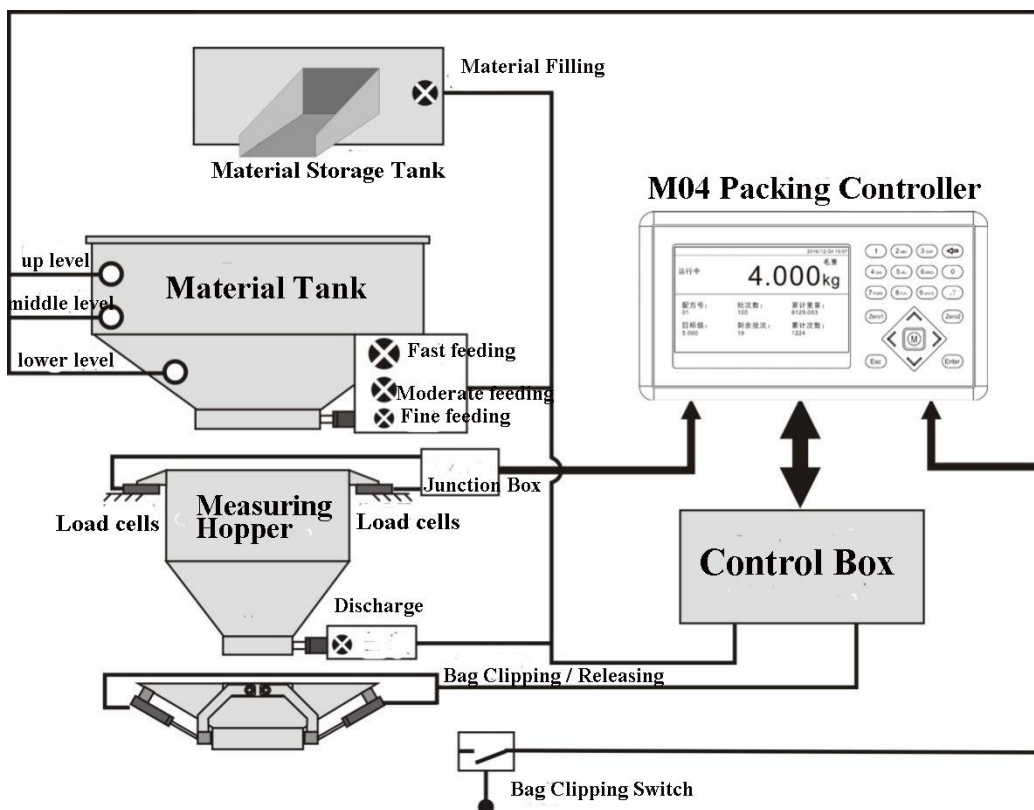
No filling levels: The indicator doesn't control to fill materials.

6. Automatic Bagging

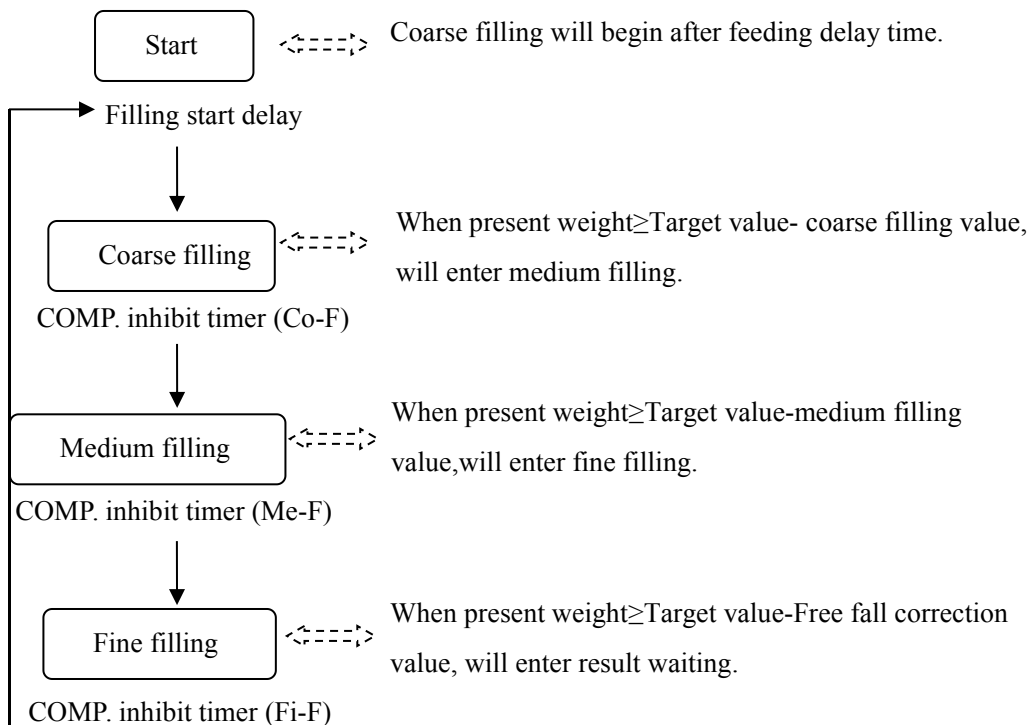
There are three bagging modes: dual hoppers interlock, with and without a weighing hopper. Weigher structure and weigher mode can be selected in working parameter.

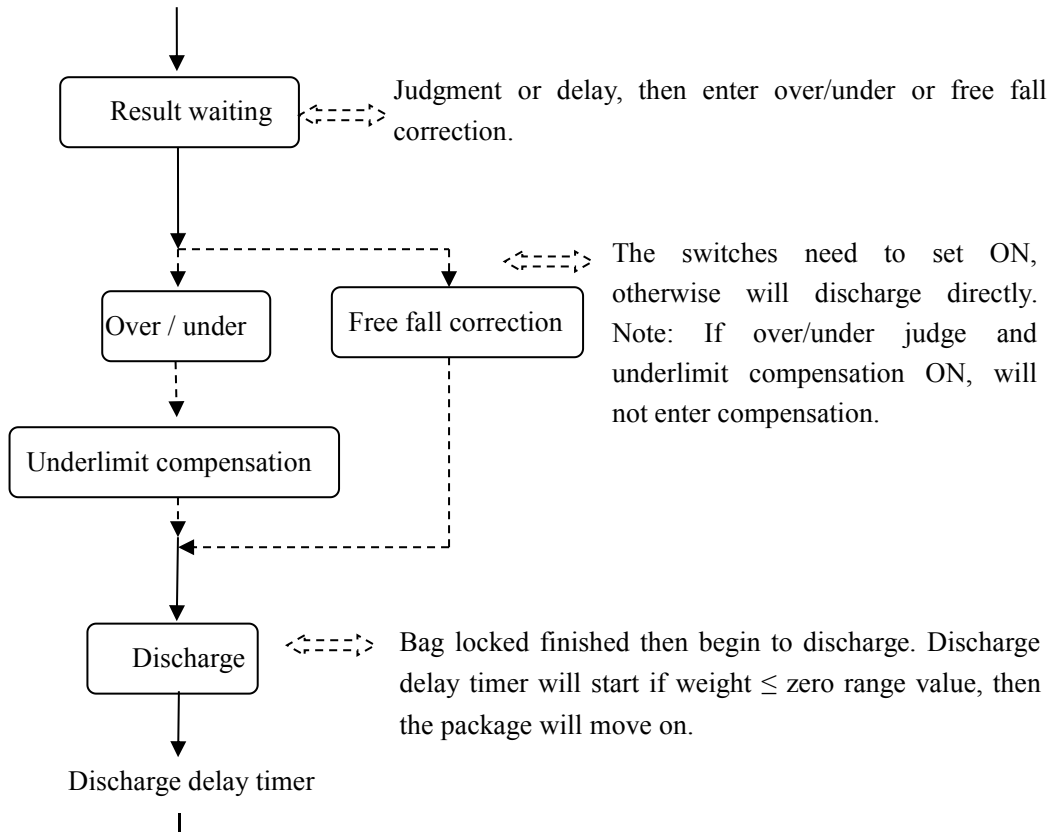
6.1 With Hopper Mode Packaging

The following sketch map indicates the bagging process with hopper:



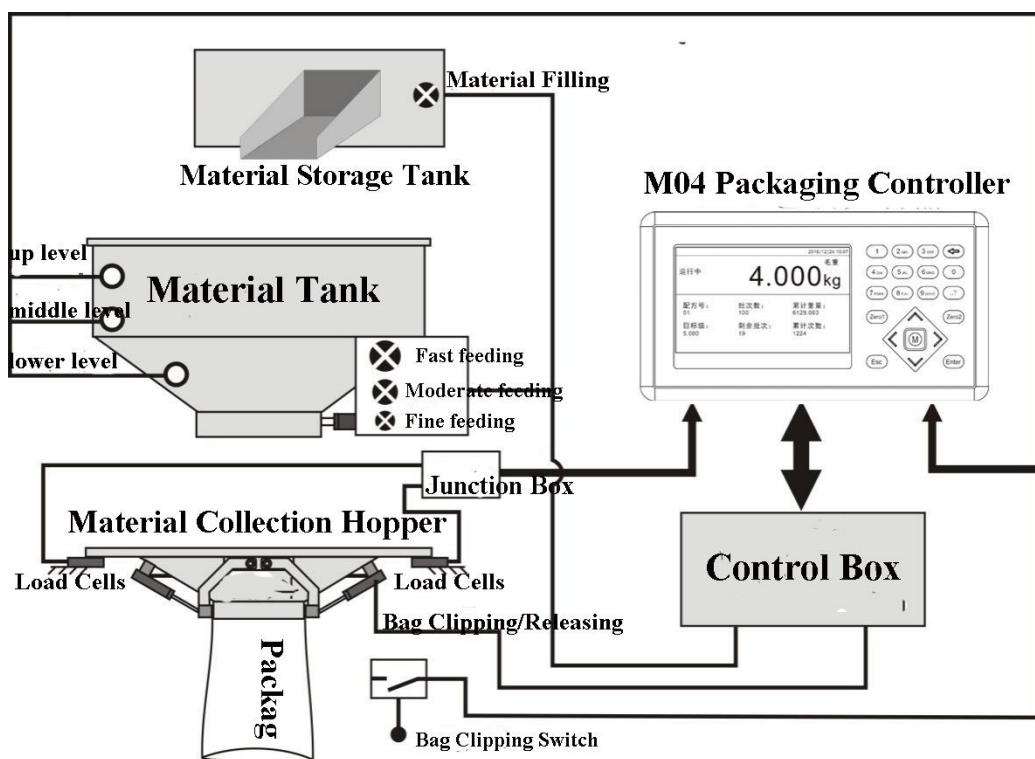
Description of the process





6.2 Without Hopper Mode Packaging

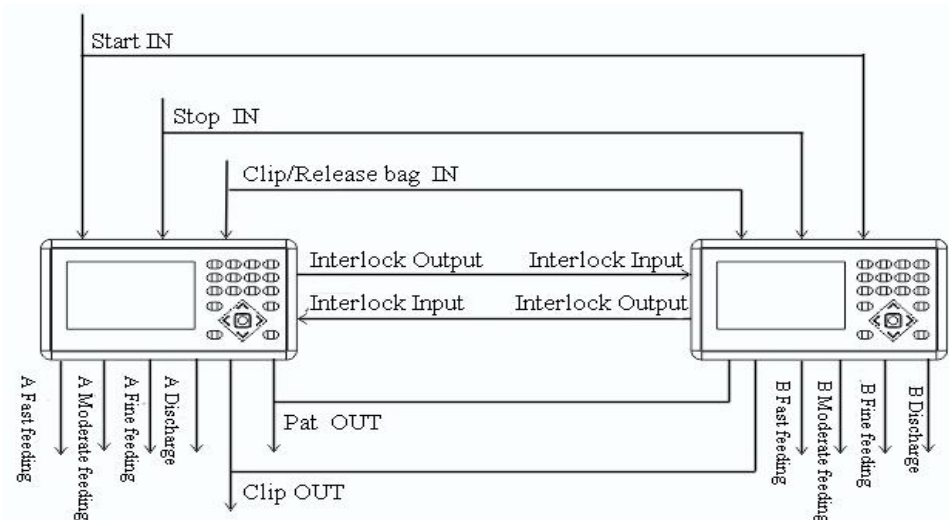
The following sketch map indicates the bagging process without hopper:



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.

6.3 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 clip bag signal effective, will begin to discharge after bag clip 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 clipping bag, so begin to discharge.

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

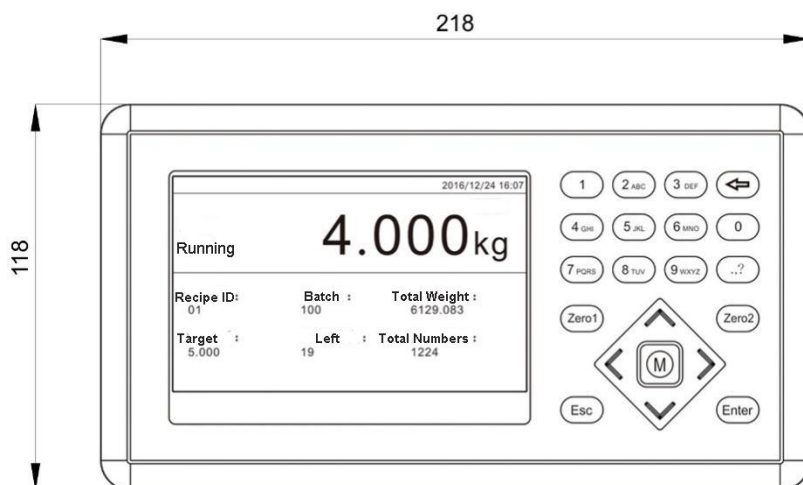
- Unlock bag

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.

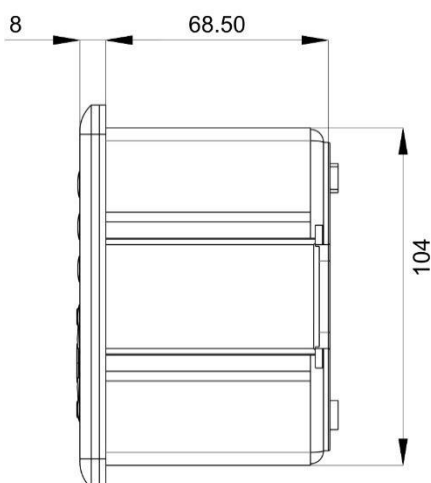
Without hopper: After result waiting within bag unlocked delay timer, it will release bag automatically.

7. Dimension

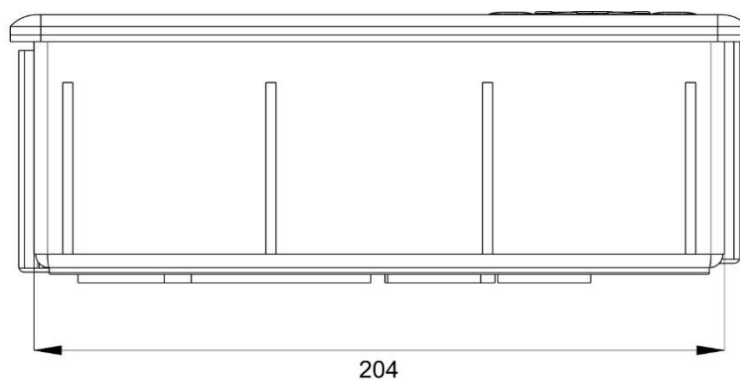
Front size



Side size



Rear size



8. Attachment (MODBUS address)

PLC Address	Protocol Address	Meaning	Illumination	
The following contents are for only read register（Function code is 0x03）				
Only Read Parameters				
40001	00000	Present status 1	byte	illumination
			.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 unstable: 0
			.8~15	Reserved
40003	00002	Present weight	4bit bytes, showing weight. Note: When indicator shows“OFL”, weight value returns 0xFFFFFFFF.	
40004	00003			
40005	00004	Total weight	4bit bytes, non symbol, mean accumulated weight.	
40006	00005			
40007	00006	Accumulated nos.	4bit 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	4bit bytes, unit: ms.	
40014	00013			

40015	00014	Medium flow time of last bag	4bit bytes, unit: ms.		update after next bagging finished.
40016	00015				
40017	00016	Fine flow time of last bag	4bit bytes, unit: ms.		
40018	00017				
40019	00018	Result waiting time of last bag	4bit bytes, unit: ms.		
40020	00019				
40021	00020	Weight of last bag	4bit bytes, with symbol.		
40022	00021				
40023	00022	Packing time of last bag	4bit bytes, unit: ms.		
40024	00023				
40025	00024	Left batch nos.	Left batch nos.		
40026	00025	Bagging speed	Update every 30s.		
40027	00026	Reserved			
.....					
40041	00040				
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	Underlimit 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
			.11~15	Reserved
40044	00043	Alarm (Manual remove)	0- Non alarm 1- Batch completed 2- Stop when overlimit/underlimit	
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 40093	00045 00092	Remain	
40094	00093	AD sample rate	AD sample speed
40095	00094	Version	4bit bytes, without symbol. If 10,000 turn decimal, then it is 01.00.00.
40096	00095		
40097	00096	Compile date	4bit bytes, without symbol. If decimal value is 150611, then it is 11 th , June, 2015.
40098	00097		
40099	00098	Compile time	4bit bytes, without symbol. If decimal value is 150611, then it is 15:06:11.
40100	00099		
The below is can read and write. (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: 3bits. 0-0bit; 1-1bit; 2-2bits; 3-3bits; 4-4bits.
40123	00122	Loadcell 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		
40130	00129		
40131	00130	Calibration without weight	Input zero millivolt.
40132	00131		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.
40133	00132		Range: 2mV/V (loadcell) < millivolt $\leq$ 10.000mV-zero millivolt. When write in, indicator will store. When read, it will be zero millivolt of loadcell.
40135	00134		Write in gain weight value($\leq$ 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 40160	00136 00159	Reserved	
Mode Parameter(Structure)			
40161	00160	Weigher structure	Initial value: 0. 0: with weighing hopper. 1: without weighing hopper.
40162	00161	Indicator working mode	Initial value: 0. 0: single hopper. 1: A scale interlocked. 2: B

		ON/OFF	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 Remains	
40206	00205		
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 forbidden comparing time t2	Initial value: 0.9s. Range: 0.0-99.9s.
40219	00218	Medium flow forbidden comparing time t3	Initial value: 0.9s. Range: 0.0-99.9s.
40220	00219	Fine flow forbidden comparing 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 holding 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	Initial value: 0.5s. Range: 0.0-99.9s.

		invalid time td	
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 40300	40242 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 when coding	Initial value: OFF (0) ON : not allowed to fill or discharge 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	Initial value: 0.

40502	00501	value	
40503	00502	Recipe2 target	Initial value: 0.
40504	00503	value	
40505	00504	Recipe3 target	Initial value: 0.
40506	00505	value	
40507	00506	Recipe4 target	Initial value: 0.
40508	00507	value	
40509	00508	Recipe5 target	Initial value: 0.
40510	00509	value	
40511	00510	Recipe6 target	Initial value: 0.
40512	00511	value	
40513	00512	Recipe7 target	Initial value: 0.
40514	00513	value	
40515	00514	Recipe8 target	Initial value: 0.
40516	00515	value	
40517	00516	Recipe9 target	Initial value: 0.
40518	00517	value	
40519	00518	Recipe10 target	Initial value: 0.
40520	00519	value	
40521	00520	Recipe11 target	Initial value: 0.
40522	00521	value	
40523	00522	Recipe12 target	Initial value: 0.
40524	00523	value	
40525	00524	Recipe13 target	Initial value: 0.
40526	00525	value	
40527	00526	Recipe14 target	Initial value: 0.
40528	00527	value	
40529	00528	Recipe15 target	Initial value: 0.

40530	00529	value	
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 weight	Recipe total PCS. and weight will be cleared when write 0 in.
40606	00605		
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 weight	Recipe total PCS. and weight will be cleared when write 0 in.
40634	00633		
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 weight	Recipe total PCS. and weight will be cleared when write 0 in.
40662	00661		
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 weight	User total PCS. and weight will be cleared when write 0 in.
40690	00689		
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	User4 total 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	User5 total 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	User6 total 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	User7 total 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	User8 total 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	User9 total weight	User total PCS. and weight will be cleared when write 0 in.
40718	00717		
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
40802	00801	IN2	
40803	00802	IN3	
40804	00803	IN4	

40805	00804	IN5	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
40806	00805	IN6	
40807	00806	IN7	
40808	00807	IN8	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 15: Coding 16: Interlock output 17: Bag lock 18: Pat bag
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 15: Coding 16: Interlock output 17: Bag lock 18: Pat bag
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	
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 40900	00822 00899	Reserved	
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: Unstable; ON: Running (zero status)	
00006 00016	00005 00015	OFF: Unstable ON: Stable	
Bits allowed Read and Write (Function code of read: 0x01. Write: 0x05)			
00017	00016	Power-Up zero ON/OFF // Writing is invalid when running.	Effective when write in ON and ineffective when write in OFF. It will show ON/OFF status when ready.
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 00032	00021 00031	Reserved	
00033	00032	All reset	Effective when write in ON and ineffective when write in OFF. If read OFF, writing in only valid when stop.
00034	00033	Calibration parameter reset	
00035	00034	Basic parameter reset	
00036	00035	Recipe parameter reset	
00037	00036	I/O function reset	
00038	00037	Advanced parameter reset	
00039	00038	Optimal parameter back-up	
00040	00039	Optimal parameter reset	

00041 00045	00040 00044	Reserved		
00046	00045	Start		Impulse input. Effective when write in ON and ineffective when write in OFF. OFF when read.
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		
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		
00061 00080	00060 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, 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.	