GENERAL MEASURE

M04

User's Manual

Table

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

Digital Button

Display   Function Button
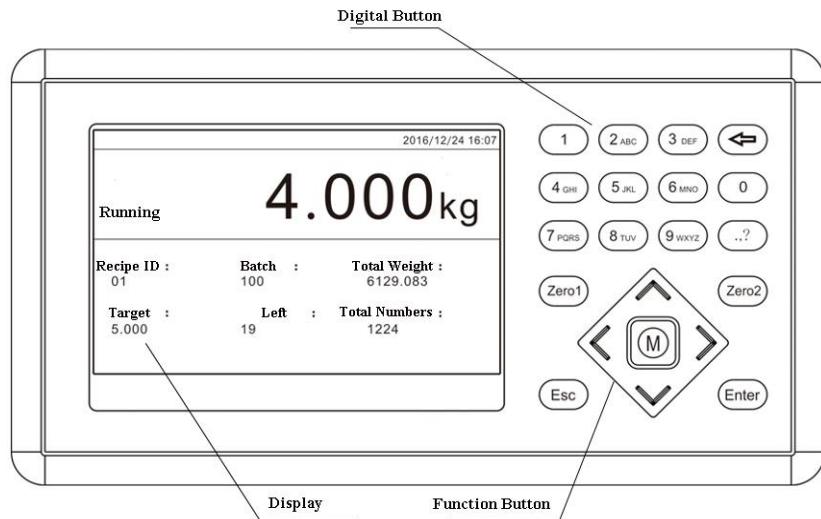
◆   Display Area: show weighing data, status and some recipe information
◆   Digital Button: input data and select parameter
◆   Function Button: 【ZERO1】Clear weighing data.
    【ZERO2】Check and set parameter accordingly by shortcut button.(Need
                    admittance.)
            【M】Set parameters
【ESC】Exit and return to main menu.
【ENTER】Confirm status.

1.3 Rear Panel Description

USB Port   Serial ports   I/O ports

Extensible use   Load cell terminal   Power

Input port
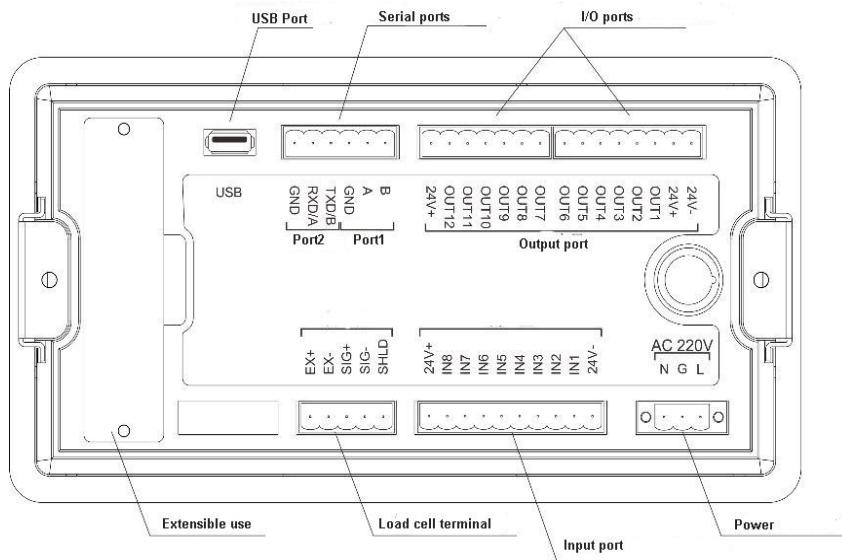
1.4 Specification

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

2.1Method

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

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 fromthe load cells is

low voltage analog signals.

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

To install the M04 into a control box, please refer to the last chapter of thismanual 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 thecontroller into the housing box, fix it with the fixing plates and lock them with screws.
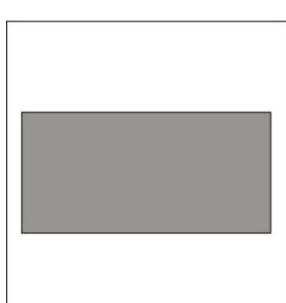
Aperture Of Control Box   Insert Controller   Tighten Strips Of Both Sides
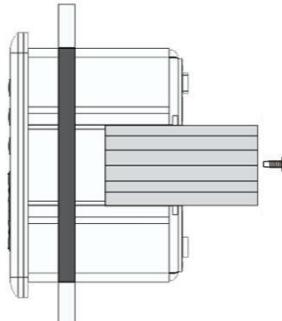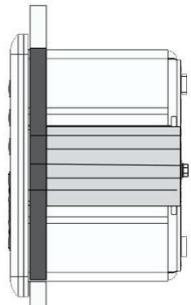
2.2 Load Cell Connection

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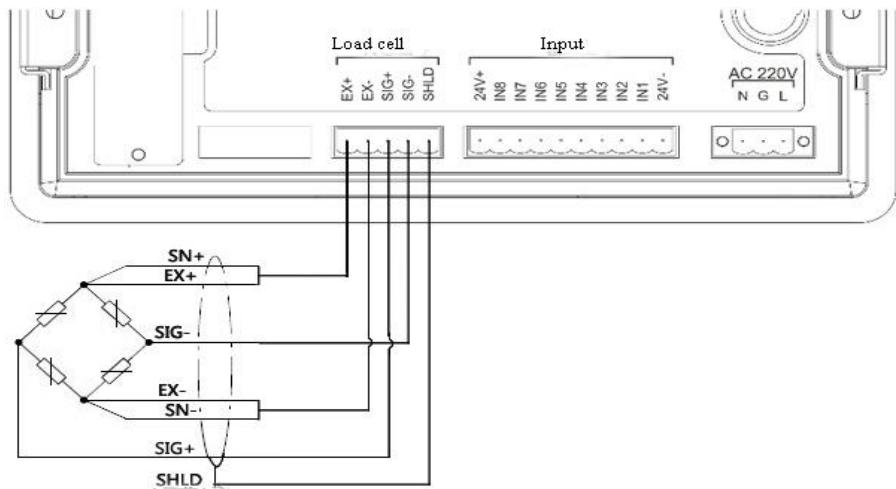
EX+: Excitation+ EX-: Excitation- SN+: Sense+ SN-: Sense- SIG+: Signal+ SIG-: Signal-

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.
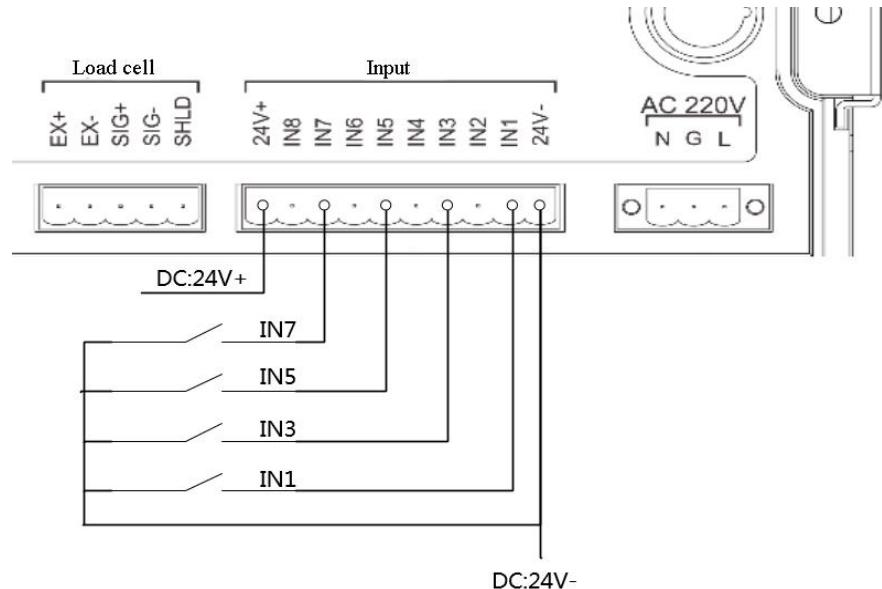
Figure: Input Schematics(Take IN1,IN3,IN5,IN7 for example)
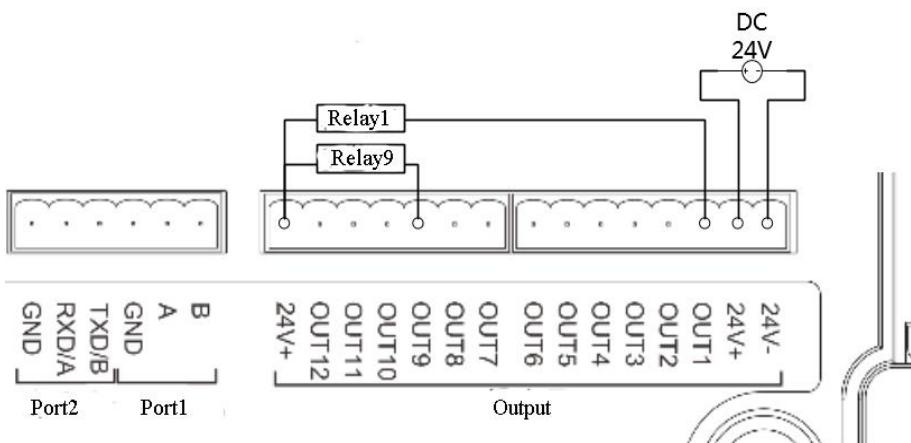
Figure: Output Schematics(Take OU1, OUT9 for example)

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

2.4 Power Supply Connection

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

grounding. The Correct connections are depicted below.
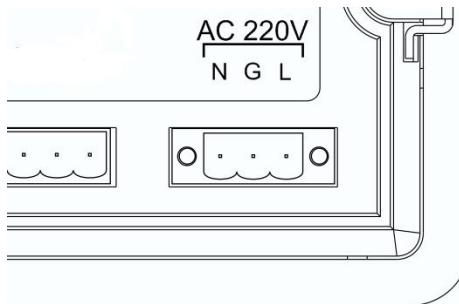
Power Supply Connector: L-Live Wire G-Ground Wire N-Null Wire

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.
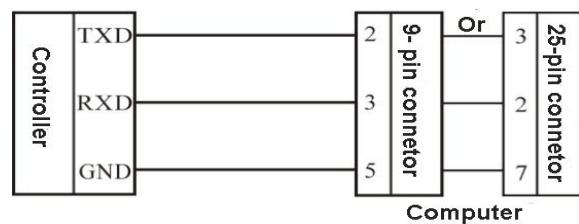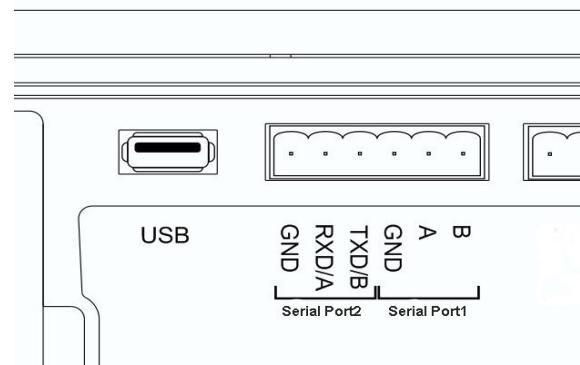
Connection between M04 and a Host Computer（RS-232）
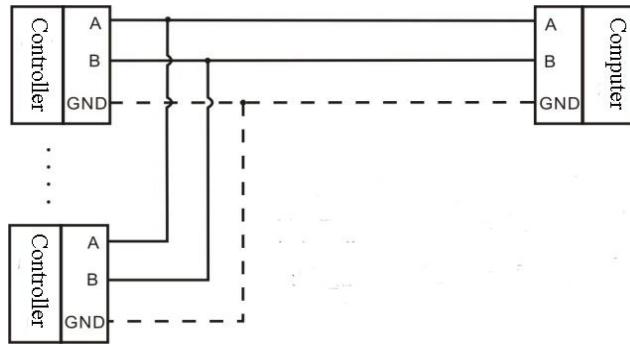
Connection between M04 and a Host Computer（RS-485）

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:

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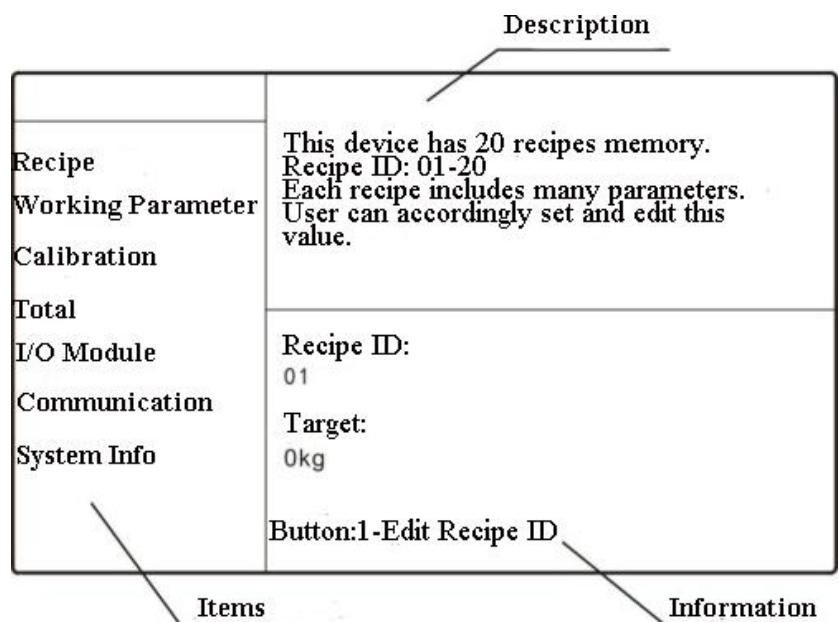
As figure showed above, the left side is parameter list; the right side is brief description and parameter information.

◆ 【▲】 & 【▼】 :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

	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	
	8.**Digit-0**	Initial value:user login	
	9.**Digit-7**	Initial value:system info.	【▲】&【▼】:Select functional parameter value
	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.

4.2 Calibration

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

on parameter	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. ≤** Min. Scale Division×**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 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 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
Working Parameter     Each recipe includes many parameters.
                      User can accordingly set and edit this
Calibration           value.

Total
I/O Module            Recipe ID:
                      01
Communication
                      Target:
System Info           0kg


                      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

item		
	Weighing value parameter setting.	
Value	**1**.Target	Target value setting.
	2.Coarse flow	Whenpresent weight ≥ Target value-Coarse flow value, and then shutoff coarse flow filling.
	3.Medium flow	Whenpresent weight ≥ Target value-Medium flow value, and then shutoff medium filling.
	4.Free fall	When present weight ≥ Target value-Free fall value，and then shutoff fine flow.
	5.Near zero band	When present weight≤ 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≤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 tolerance-alarm parameter setting
Over/un der	**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 ≥ target value + over value, it is over tolerance.
	4.Under value	When present weight ≤ 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 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 inwithout 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.)
Other parameters	**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..

Communication	Items	Description
Communication (RS485, optional RS485/RS232 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.

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.

6.1WithHopper Mode Packaging

The following sketch map indicates the bagging process with hopper：
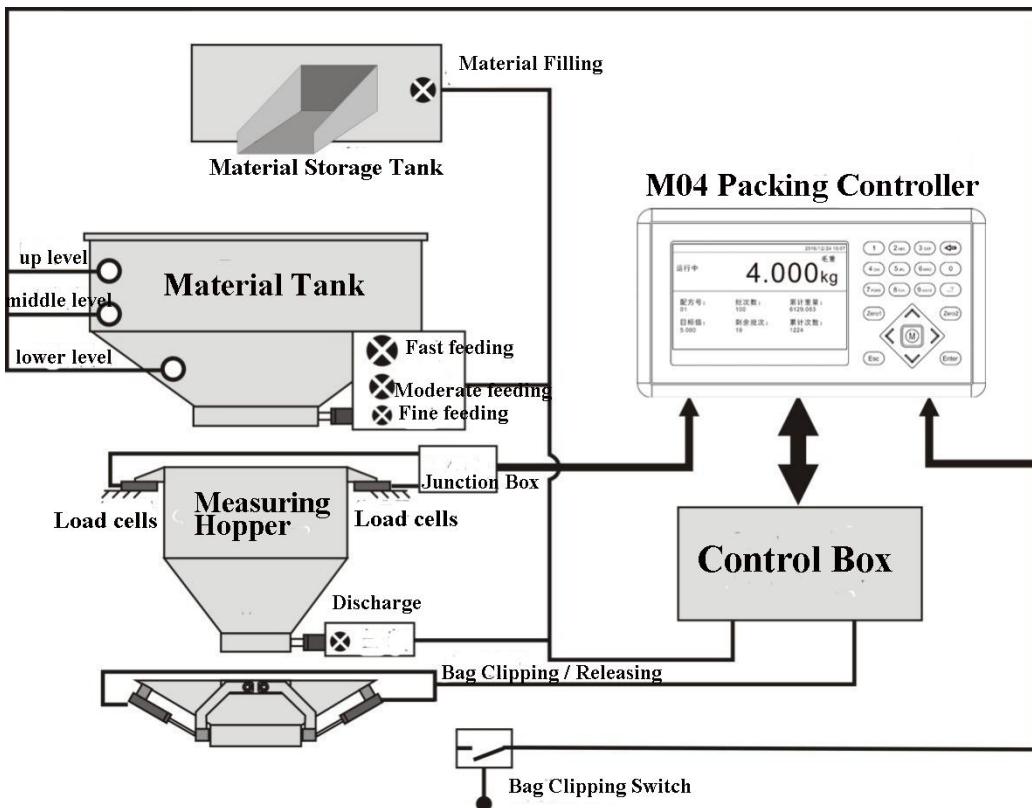
Description of the process

| Start | Coarse filling will begin after feeding delay time. |

Filling start delay

| Coarse filling | When present weight≥Target value- coarse filling value, will enter medium filling. |

COMP. inhibit timer (Co-F)

| Medium filling | When present weight≥Target value-medium filling value,will enter fine filling. |

COMP. inhibit timer (Me-F)

| Fine filling | When present weight≥Target value-Free fall correction value, will enter result waiting. |

COMP. inhibit timer (Fi-F)

Result waiting ⟨----⟩ Judgment or delay, then enter over/under or free fall correction.

Over / under

Free fall correction ⟨----⟩ The switches need to set ON, otherwise will discharge directly. Note: If over/under judge and underlimit compensation ON, will not enter compensation.

Underlimit compensation

Discharge ⟨----⟩ Bag locked finished then begin to discharge. Discharge delay timer will start if weight ≤ zero range value, then the package will move on.

Discharge delay timer

6.2 Without Hopper Mode Packaging

The following sketch map indicates the bagging process without hopper：
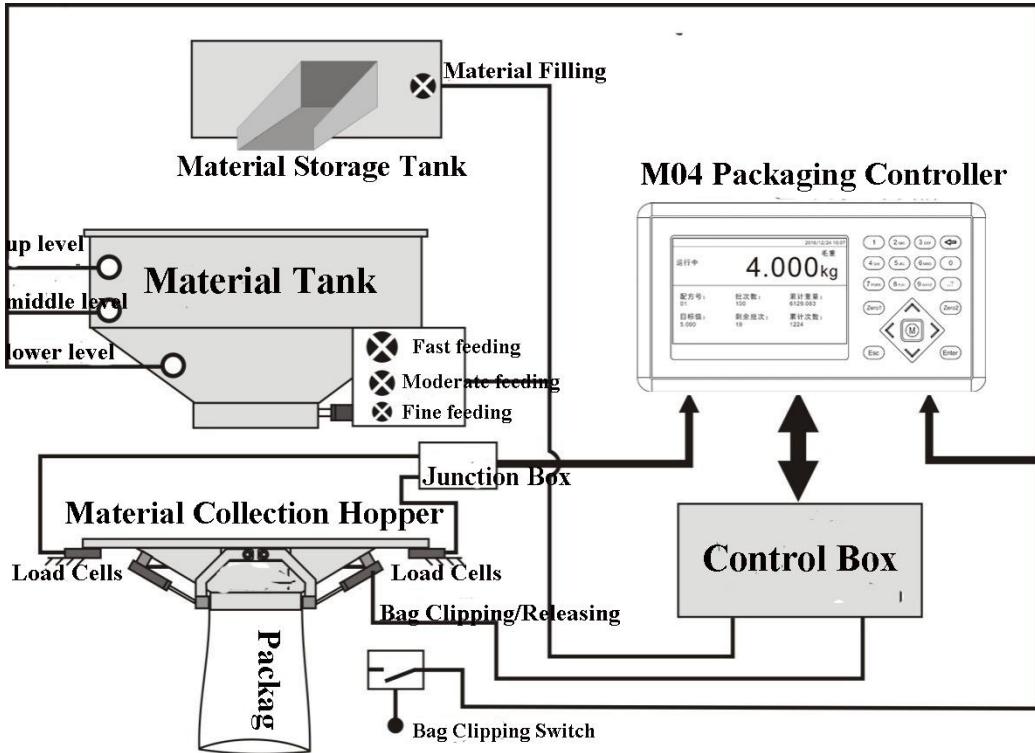
For without weighing hopper mode, the load cell is installed over material collection hopper, which is the main difference from with hopper mode. Start feeding after finishing bag lock.

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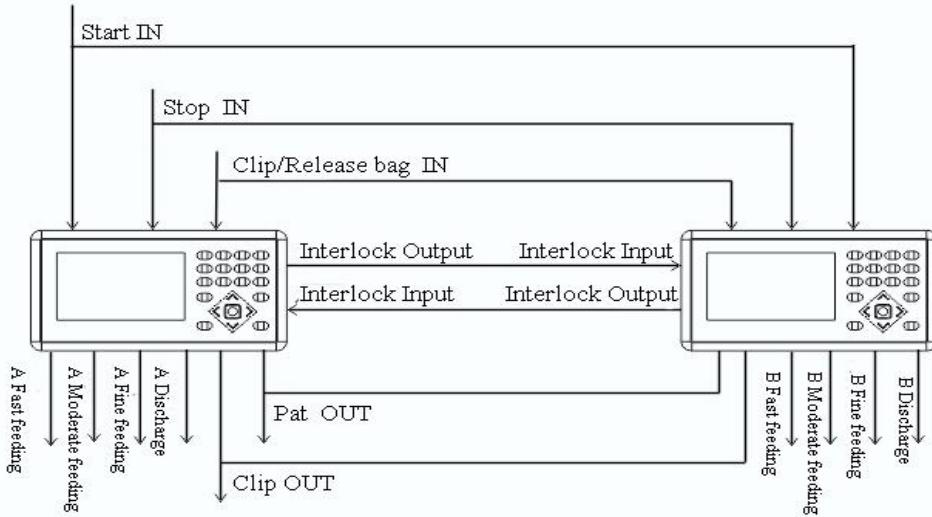
For interlock mode with two hoppers, user need set target value of Scale A and Scale B, including coarse flow, medium flow, fine flow and so on. Then the indicator will control the whole process separately, such as filling speed, discharging and bag unlocked. First result waiting, then will discharge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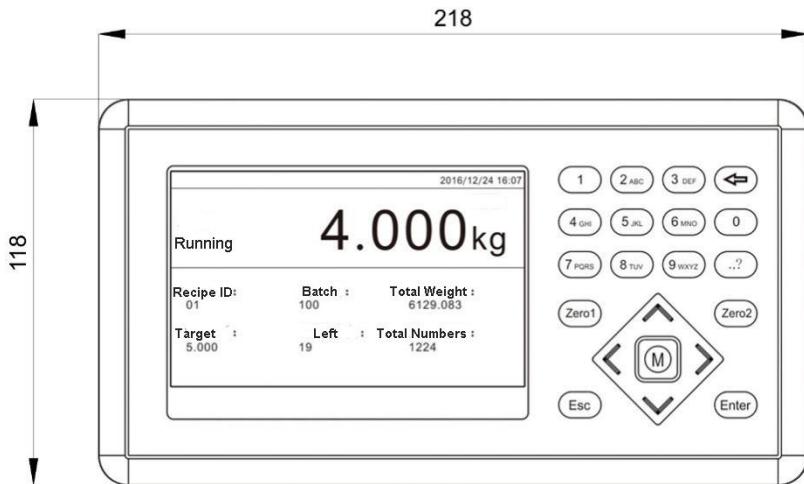
Side size
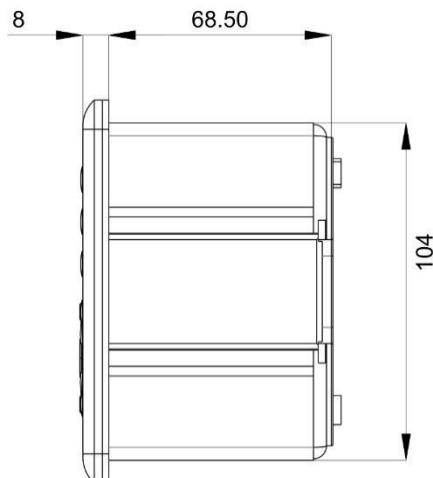
Rear size
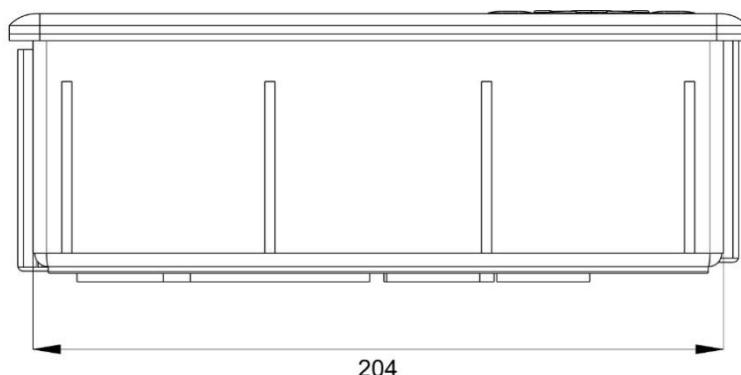
8. Attachment (MODBUS address)

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　instable：0	
			.8~15	Remain	
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.	The data of last bag will	
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 …… 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	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 40096 00095		Version	4bit bytes, without symbol. If 10,000 turn decimal, then it is 01.00.00.
40097 00096 40098 00097		Compile date	4bit bytes, without symbol. If decimal value is 150611, then it is 11th, June, 2015.
40099 00098 40100 00099		Compile time	4bit bytes, without symbol. If decimal value is 150611, then it is 15:06:11.

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 ≤ Decimal*100000 ≤999999.
40126	00125			
40127	00126	Calibration weight	Zero 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	with	Gain calibration with weight	Input weight value (≤Full scale) When read, it will be the zero millivolt of loadcell.
40130	00129			
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 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	
40202	**00201**		
40203	**00202**	Coarse flow remains	
40204	**00203**		
40205	**00204**	Medium flow Remains	
40206	**00205**		
40207	**00206**	Free fall	
40208	**00207**		Weight value: $\leqslant$ full scale value
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 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	**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
40802	00801	IN2	1： Start
40803	00802	IN3	2： Stop
40804	00803	IN4	3： Emergency stop
			4： Zero

40805	00804	IN5	**5：** Clear alarm
40806	00805	IN6	**6：** Change recipe
40807	00806	IN7	**7：** Discharge request
40808	00807	IN8	**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
40809	00808	OUT1	**0：** Non
40810	00809	OUT2	**1：** Running
40811	00810	OUT3	**2：** Stopped
40812	00811	OUT4	**3：** Coarse flow
40813	00812	OUT5	**4：** Medium flow
40814	00813	OUT6	**5：** Fine flow
40815	00814	OUT7	**6：** Result waiting
40816	00815	OUT8	**7：** Ready
40817	00816	OUT9	**8：** Discharge
40818	00817	OUT10	**9：** OVER/UNDER **10：** Alarm
40819	00818	OUT11	**11：** Filling supplement **12：** Supplement empty
40820	00819	OUT12	**13：** (-NZ-) **14：** Batch complete **15：** Coding **16：** Interlock output **17：** Bag lock **18：** Pat bag
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 toIN8. "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	**0FF**: 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 recovery	Effective when write in ON and ineffective when write in OFF. If read OFF, writing in only valid when stop.
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		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.