VALUE EACH GRAM
HiWEIGH

WEIGHING INDICATOR Y200

User Manual


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HiWEIGH

The applicable objects:

Anyone to install, debug or diagnose the Y200 Weighing Control Module. You should have basic knowledge of circuit and weighing. If not, then some training is advised before using the product.

The content of the manual:

This manual is the instruction of Y200 Weighing Control Module. It introduces the installation, connection and trouble diagnosis of the controller. This manual:

Explains how to install and connect the modules;

Introduces the overview of Y200 Weighing Control Module.

Cautions: *Only professionals can debug, examine and repair the system.*

Cautions: *Hot-line work is forbidden. Make sure the power has been cut before electrical work.*

Cautions: *This module is electrostatic-sensitive device. Take anti-static measures during the use and maintenance.*

Contents

Appendix D Software Upgrade

Chapter I: Introduction

Y200 is a professional weight controller module for process weighing. With use-friendly interface and stable quality, it's being widely used in checkweigh, filling and batch packing industry.

1.1 Overview

- Module design,guide rail mounted.
- Support one analog scale(maximum 6 pieces 350Ω load cells)
- OLED dot matrix display, easy to read in all light conditions
- 24VDC input power supply
- Direct operation by keypad: zero, tare, clear and print.
- Comparator (simple preset point), to compare the weight or the flow rate.
- Weight unit: g, kg

1.2 models

Y200	1xRS232 1xRS485
Y200_IO	2 input and 4 output
Y200_DA	4-20mA output

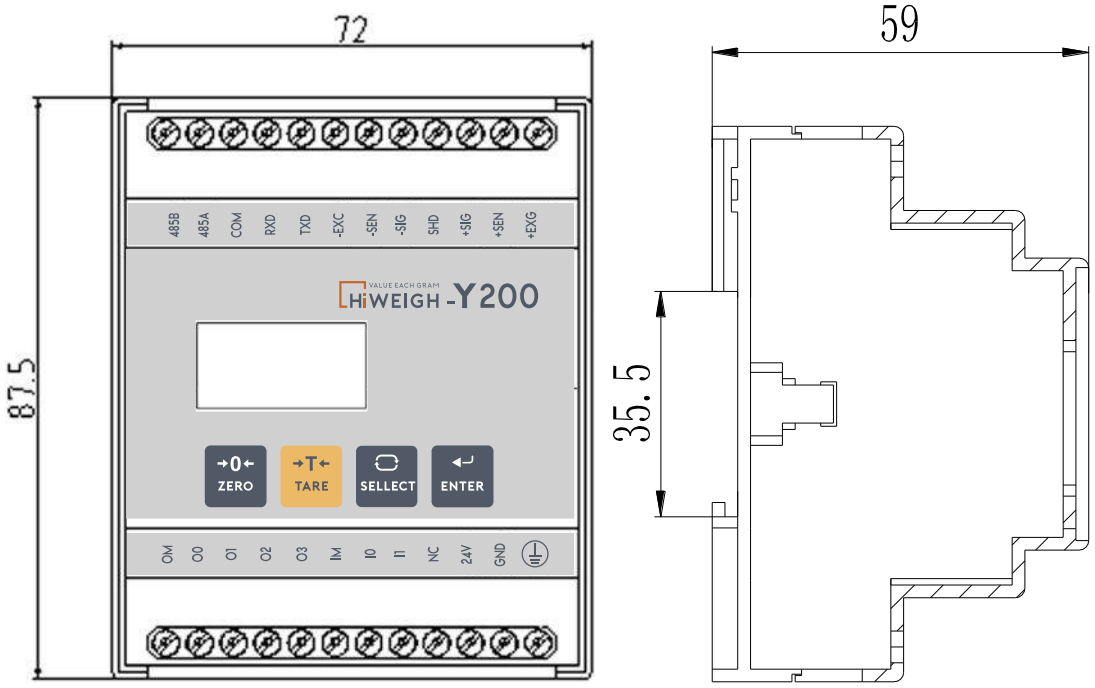
1.3 Specifications

Main Features	
Enclosure	Plastic housing with display and keypad
Dimension	87.5mm×59mm×72mm
Protection Class	IP20
Operation Environment	Temperature:-10°～ 40℃ (14°～ 104°F) Relative humidity： 10%～95%, Non-condensing
Power Supply	+24VDC（±15%）, power<3W

Display	blue OLED，0.96’’, 128X64
Max.Resolution	100,000
Weighing Platform	One analog platform
Load Cells Number	1-6pieces 350Ω load cell (sensibility:2 or 3Mv/v)
A/D Sampling rate	200Hz
Excitation voltage	5VDC
Minimum input sensibility	0.6μV/d
Keypad	4 touch membrane function keys
Communication	1x RS-232 interface,300-115,200 baude rate 1x RS485 interface,300-115,200 baude rate Communication Protocol: Continuous output, Modbus Rtu
Optional features	IO: 2 in 4 out DA：4～20mA output

1.4 Dimensions

the unit is mm



1.5 Scale Basw

Y200 module support the analog weighing platform,it can provide 5V excitation voltage for driving up 6 pieces 350Ω analog load cells.The 6 wire load cell can guarantee the accuracy of measurement dispite of the resistance change of the load cell cable per the change of the temperature

1.6 Display and keyboard

Y200 module with a 128*64 OLED display

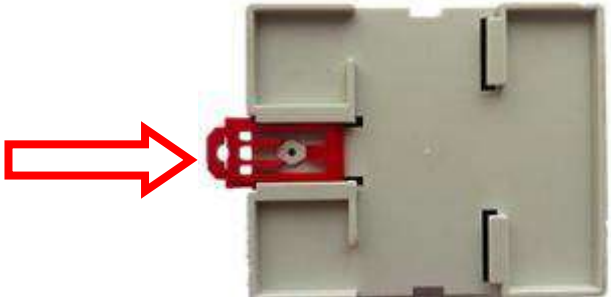
There are four basic funtions keys on the panel: zero, tare, clear and print.They also can be used to enter the menu of parameters setting, select and input parameter values.

Chapter II: Installtion

This chapter introduces the Y200 module installation method and interface connection method.

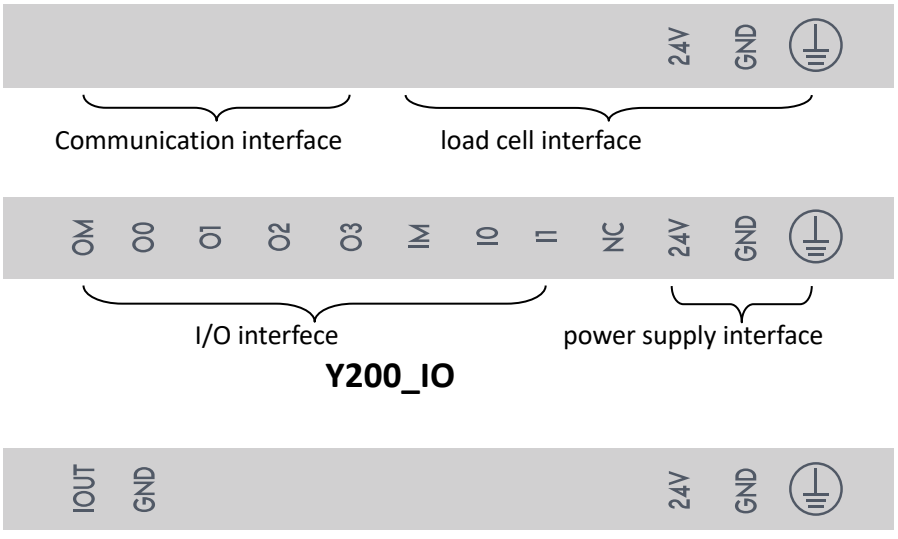
2.1 Module installation

Y200 module with standard guide rail installation enclosure,it can be mounted on 35mm wide rail.Firstly,determine the fixed latch that it has unlocked,and according to the direction of the red arrow,make Y200 to jam on the rail,the method to be dismantled is similar with the method of rail



2.2 Wire Connection

Y200 module pin definition is shown below.



Y200_DA

2.1.1 power supply connection

Y200 module is working with 24VDC power supply, and the 24VDC power must be directly connected to the terminal of mainboard.

pin	signal	remark
24VDC	External 24V power supply positive	
GND	External 24V power supply negative	
⏚	Ground wire	

2.1.2 load cell connection

Y200 module can work with 6 units 350Ω analog load cells(or about 58Ω minimum resistence), it needs to confirm whether the load cell is connected within the permissible range, the total impedance of this scale(TSR) must be calculated with formula as below:

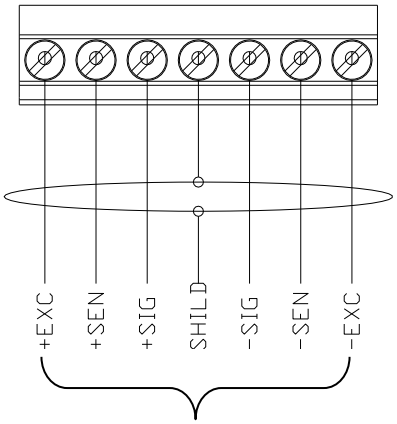
$$TSR = \frac{\text{Load cell input inpedance（Ω）}}{\text{Load cell's number}}$$

Before the connection of load cells,the user has to marke sure that the TSR is greater than 58Ω.if less than 58Ω， the controller will not work normally,in addition, it needs to consider the maximum distance of cables. The below table is the recommended maximum length of cable according to TSR.

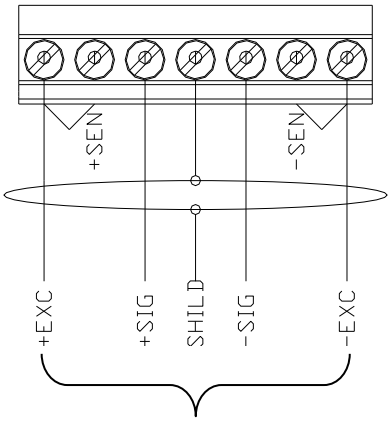
TSR （Ω）	24# cable （meter）	20# cable （meter）	16# cable （meter）
350	243	610	1219
58（6x350Ω）	40	122	224

The definition of load cell terminal:

pin	signal	remark
+EXC	+ excitation	4-wire load cell shorting these two terminals
+SEN	+sense	
+SIG	+signal	
SHD	Shield ground	
-SIG	-signal	
-SEN	-sense	4-wire load cell shorting these two terminals
-EXC	-excitation	



6-wire load cell or junction box

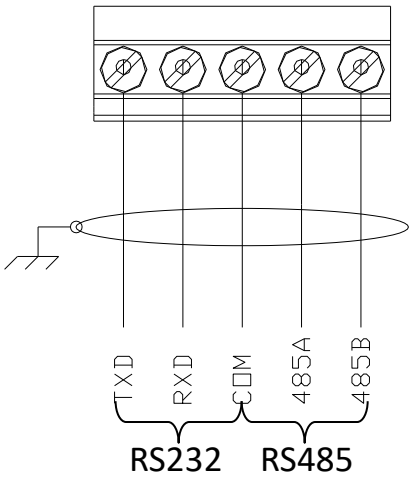


4-wire load cell or junction box

2.1.3 serial port connection

There are two independent serial output,one is RS232,another is RS485.the definition of the pins as below:

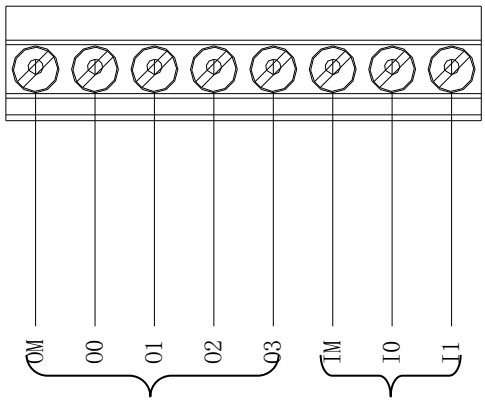
pin	signal	remark
TXD	RS232 transmit	
RXD	RS232 receive	
COM	RS323、RS485 common ground	
485A	RS485 Receive+	
485B	RS48 Receive-	



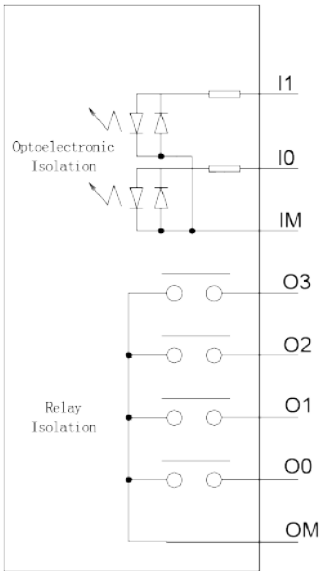
2.1.4 I/O connection

Y200_IO module with 2 passive input and 4 relays dry contacts normally open output.the definication of Pin is as follows:

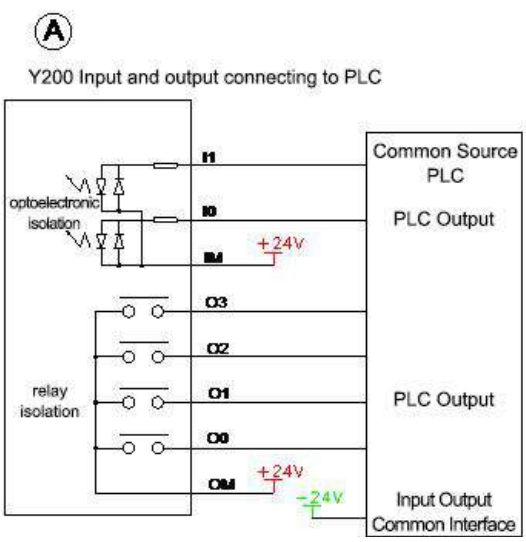
Pin	signal	explanation
OM	Output interface common terminal	Output Properties: AC：30～250VAC/1A DC：5～30VDC/2A
O0	Output port 0	
O1	Output port 1	
O2	Output port 2	
O3	Output port 3	
IM	Input interface common terminal	Input Properties： High level：10～24VDC Low level：0～3VDC
I0	Input port 0	
I1	Input port 1	

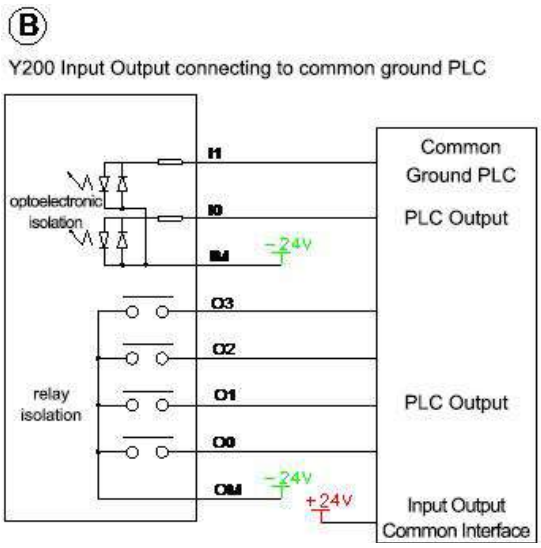


Y200_IO module internal input/output diagram:



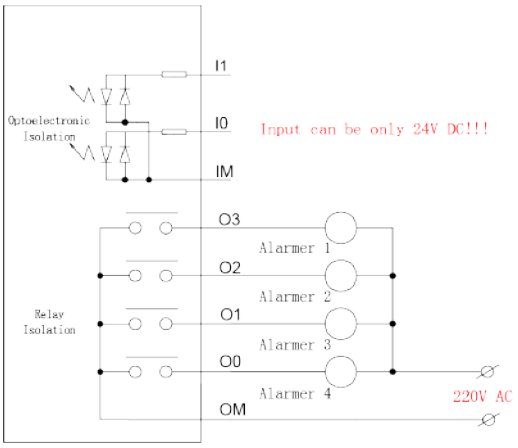
Some methods of the connection of input/output interface for Y200 modules:





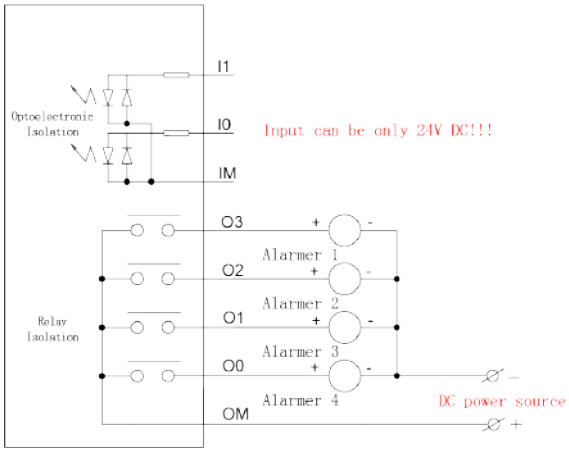
C

Y200 connecting to 220V alarmer



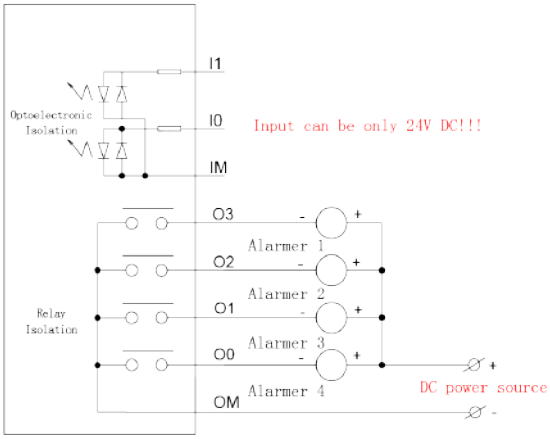
D

Y200 connecting to DC alarmer (Method I)



E

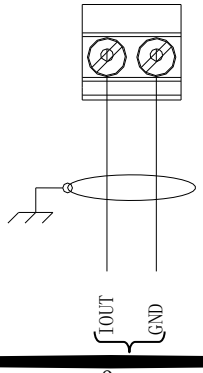
Y200 connecting to DC alarmer (Method II)



2.1.5 DA connection

Y200 module offer 0～20mA、4～20mA、0～24mA analog signal， which is proportional to the weight on the scale.

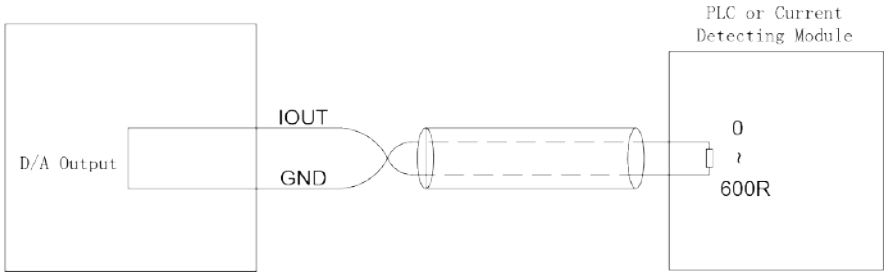
Pin	Signal	explanation
IOUT	4～20mAoutput	Output impedance 0～600Ω
GND	Analog output ground	



4～20mA output

Ⓐ

Y200 Analog Output Wiring Diagram



Chapter III: Operation

This chapter will introduce Y200 module basic operation and functions.

3.1 Display Screen

In weighing mode,the disply is for display the weight value and other weighing informations,these informations are including:

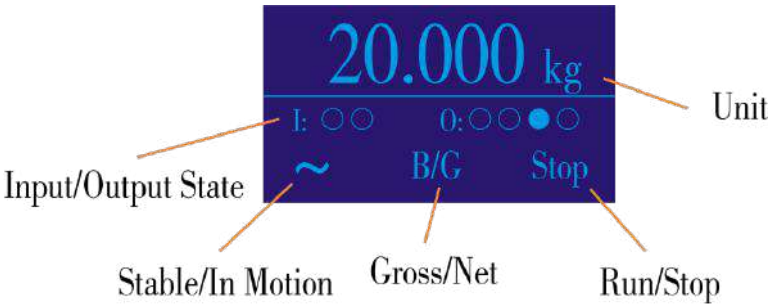
Weight unit（kg，g）

Input/Output state

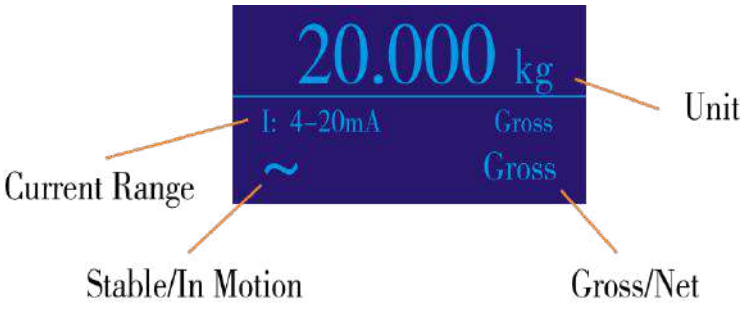
Stable/in motion

Gross/Net

Running/Stop

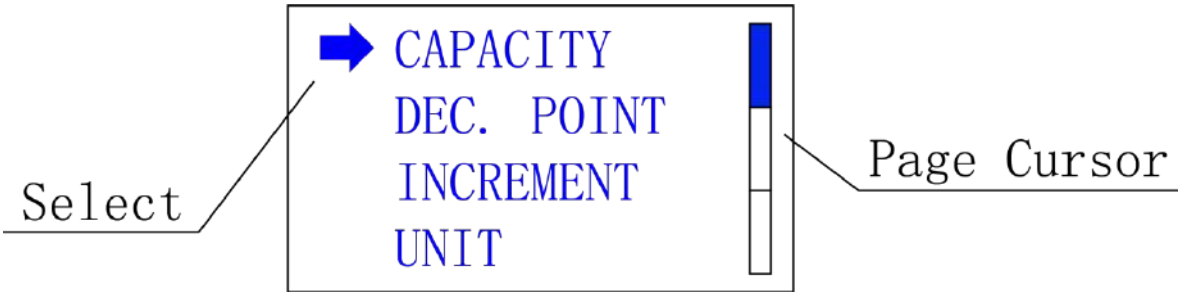


IO model weighing display



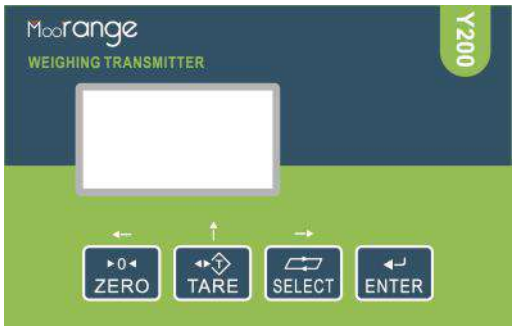
DA model weighing display

When enter the operation menu or the menu of setting, it will display menu,parameter and setting.the next chapter will introduce the process of the operation in details.The operation menu is as follows:



3.2 keyboard operation

There are four function keys on the keypad panel and the below table is the detailed function of those four keys in user's operation.



Icon	Functions	function
ZERO	Zero	When the weighing platform is empty,the indicator will display zero. It records the reference zero point for the gross weight. When the manual zero function active and within the range, it can capture a new zero reference point by pressing Zero key.
TARE	Tare	Tare is the weight of empty container.the gross weight minus tare weight is equal to net weight. When the container is empty, press the tare key, the indicator will show zero as net weight. After the container is filled with the object,the indicator will display the object's net weight.To use tare key, the tare function must be activated in parameters configuration.
SELECT	Select	Under the main weighing display,the Select key can

		manual switch running /stop.
ENTER	Confirm	Under the stop state,pressing this key 3 seconds to enter the setting menu.

When the weighing platform is in motion,it will not perform zero, tare commands.

3.3 Operation menu

After the stop state, pressing enter key ENTER about 3 seconds to enter the operation menu,the indicator will switch from the weight display to parameters setting. Afterwards, those four function keys can be used as arrow and input keys as below:

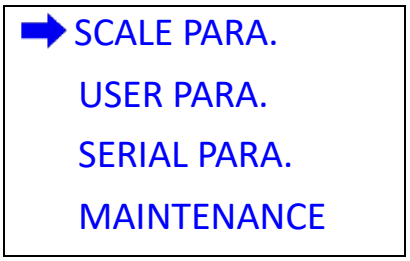
Icon	In Menu Tree	In Parameter Select	In Value Input
ZERO	Return	Exit	Exit
TARE	Up	Previous	Increase digit
SELECT	Down	Next	Digit move right
ENTER	Enter	Confirm exit	Confirm exit

Chapter IV Parameter Configuration

This chapter will introduce the method of Y200 parameters setting.

4.1 Parameter setting enter

In the main display,press key ENTER for 3 seconds to enter the parameter's setting mode,the showed interface is as follow:



If it needed, start to do parameters setting by entering the tree menu.

4.2 Parameter setting exit

In the parameter's setting mode, press ZERO key to return to the normal weighing mode.

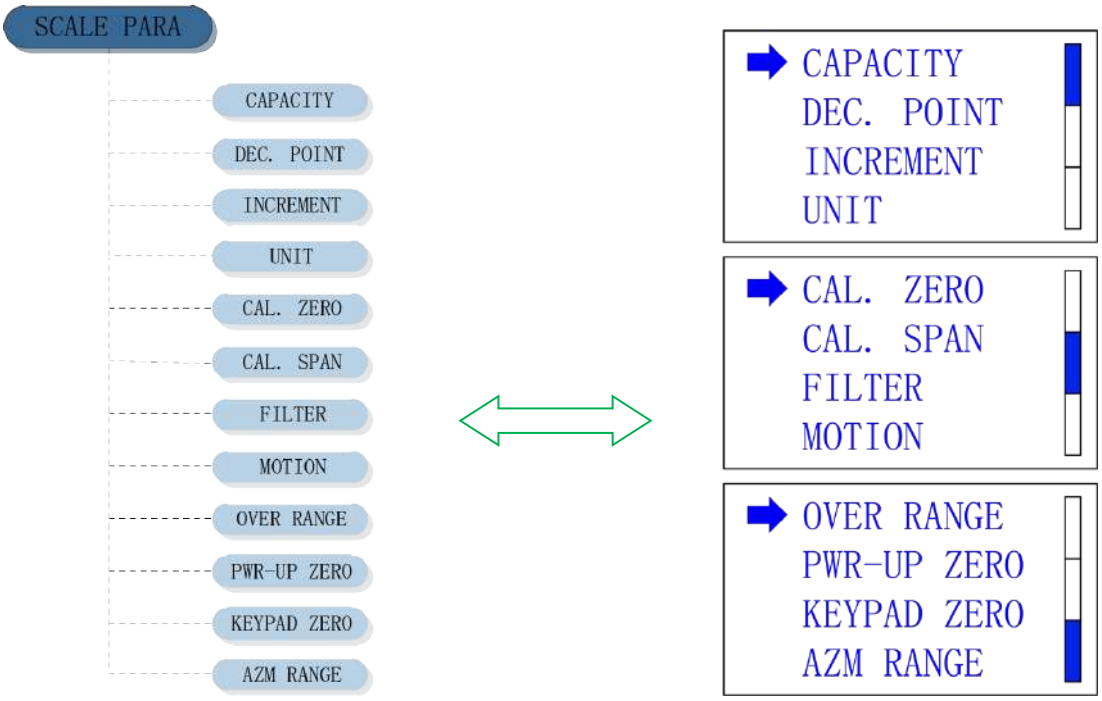
4.3 Parameter configuration

In the parameter's setting mode has four submenus, as follows

The below chart shows the method of the parameter setting of each menu and it's definition. Appendix A has a complete structure diagram of menu tree.

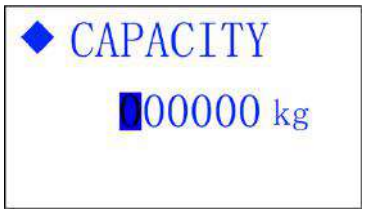
4.4 System parameter setting

This menu includes scale's parameter settings:



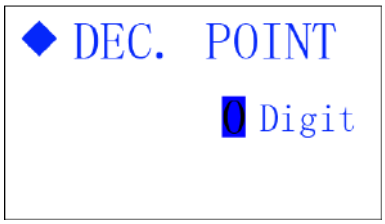
4.4.1 Maximum capacity

To input the maximum capacity (full scale), and press ENTER key,the maximum value is 199999,in the normal operation,if the loaded weight is more than the instrument's maximum capacity, the controller will display"┌──────┐",means overload.



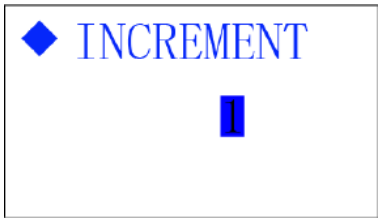
4.4.2 Decimal places

In the menu of number of decimal places,according to the capacity of scale to enter the number of decimal places,the range is 0-4.



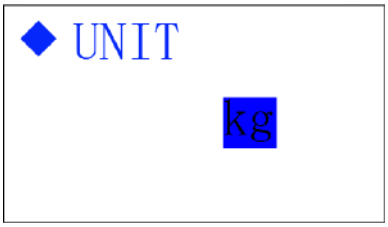
4.4.3 Minimum division

According to the maximum capacity, the controller will caculate the effective division according to 500-100000 resolution, the user can select the suitable value.



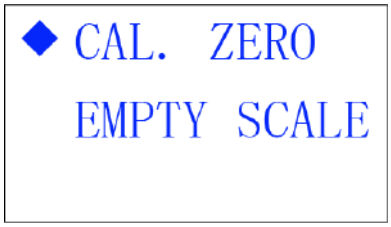
4.4.4 Units

The user can select Kg or g as weight unit



4.4.5 Zero Calibration

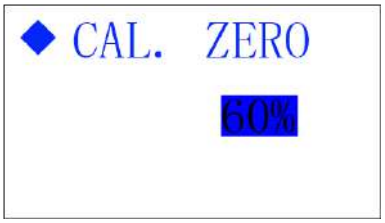
Select it and the scale will enter Zero Calibration process.



Press 

key the scale will do zero calibration and the screen will display the progress grade 20%, 40%, 60%, 80% until 100% and end.

For zero calibration, please make sure nothing on the weighing platform.

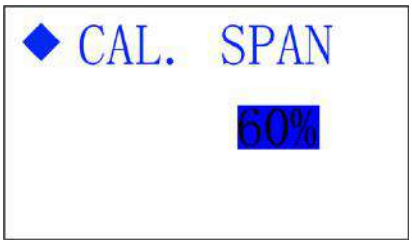


4.4.6 load point calibration

Enter the menu of load point calibration, it will indicates to add load for putting the test weights.

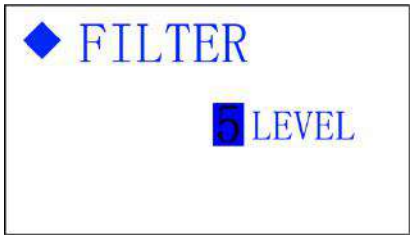
After loading the test weight on the scale, please press ENTER key,the screen will appear “INPUT WEIGHT” for inputting the weight value, at this time enter the weight value of test weight being used.

Then press ENTER key, start to do load point calibration, and the screen will display the progress of calibration: 20%,40%,60%,80%,till 100% finished.



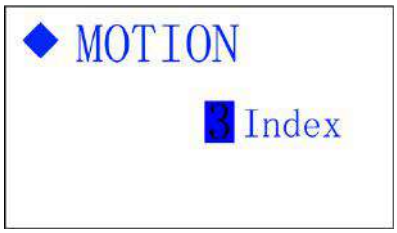
4.4.7 Filter

To set the parameter of filter, press TARE key or SELECT key to select the parameter of filter 1-9, press the ENTER key to confirm. The value is bigger,the filter is heavier.



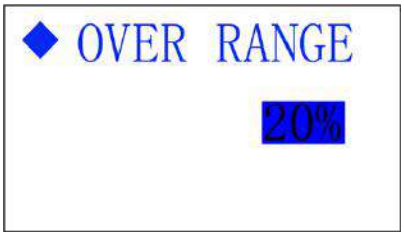
4.4.8 In motion range

Set the range of detection in motion, press the tare key TARE or the SELECT key to select the range of motion (1-6d), press the ENTER key to confirm.



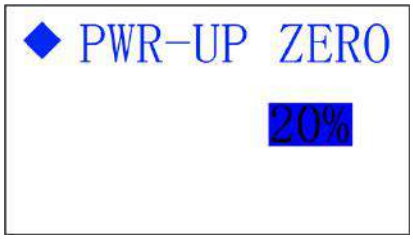
4.4.9 Overload display range

Set the overload range, press the TARE key or the SELECT key to choose the range of the overload display,2%,10%,20% is available, press the ENTER key to confirm.



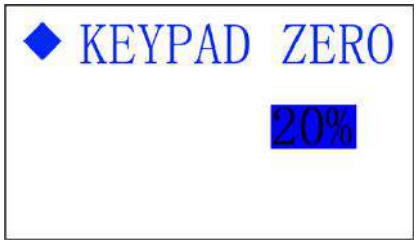
4.4.10 Power up zero range

Set the powerup zero range, press the TARE key or the SELECT key to choose the range of it: off, 2%, 10% or 20%. press the ENTER key to confirm.



4.4.11 Manual zero range

Set the manual zero range, press the TARE key or the SELECT key to choose the range of it: 2%, 10% or 20%. press the ENTER key to confirm.

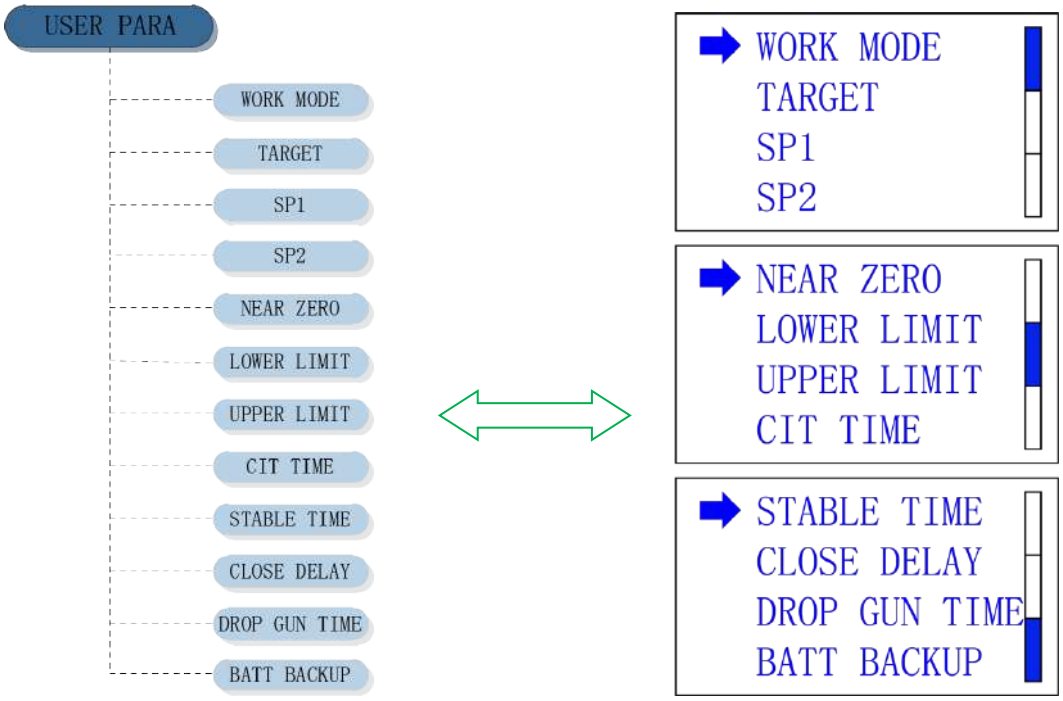


4.4.12 Zero track

Set the range of Zero tracking, press the TARE key or the SELECT key to choose the range of it: 2%, 10% or 20%. press the ENTER key to confirm.

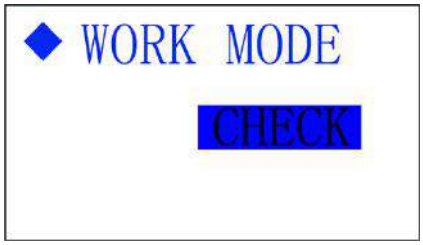
4.5 Application parameters setting

This menu is including the configuration of application parameter of scale, **available for Y200_IO model only.**



4.5.1 Application mode

Set the application mode, includes “none”, “the incremental mode”， “ the mode of reduction”, “ the gross filling”, “ the net filling”, “upper and lower limit mode”, “three materials batching”. Press the TARE key or the SELECT key to choose the mode of application, press the ENTER keyto confirm. The detailed flowchart of working mode can be found in appendix.

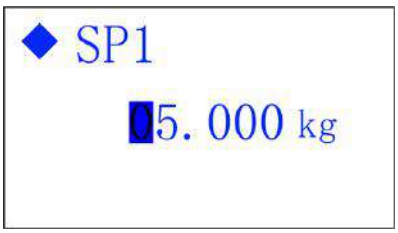


4.5.2 Target weight

Set the value of target weight to be packaged or to be filled, press the tare key TARE or the select key SELECT,after enter the object weight, press the confirm key ENTER to confirm.

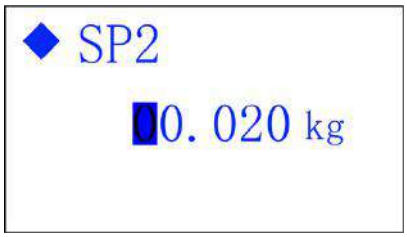
4.5.3 Fast filling setpoint

Here to set the weight setpoint which switch from the fast feeding to the slow feeding. When the weight in the scale is more than or equal to (the target weight - SP1), to switch the fine feeding (slow feeding) mode. Press the tare key TARE or the selection key SELECT to enter the SP1 value, press the ENTER key to confirm.



4.5.4 Fine/slow filling setpoint

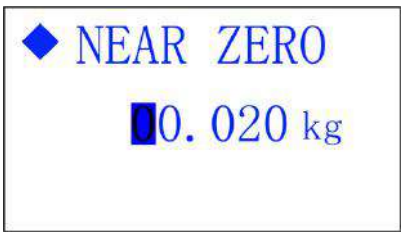
This parameter determined the setpoint weight of the slow feeding closed completely. When the weight on the scale is more than or equal (the target value – SP2),the door of slow feeding will close. Press the tare key TARE or the selection key SELECT to enter the SP2 value and press the ENTER key to confirm.



4.5.5 Empty scale range

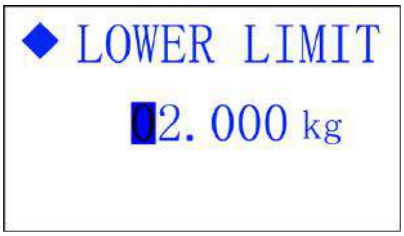
This parameter is for knowing whether the scale is in the empty state. Due to that the working scale is difficult to be in t absolutely zero state, therefore introduce the concept of the range of empty scale.in the process of application, before the

feeding, it needs to know whether the current weight is less than the empty weight, if it is more than it, the feeding process will not start; In the discharging process, according this parameter to know whether the materials discharged completely, only the current weight is less than the empty scale value, it can be taken as the finish of discharging process, and the discharge door can be closed. press the tare key TARE or the selection key SELECT to enter the empty weight, press the confirmed key ENTER to confirm.



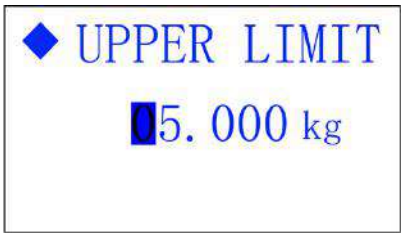
4.5.6 Lower limit weight

Only in the mode of filling, this parameter is effective. It's used for knowing whether the tare weight is qualified, if it is not qualified, it indicates material remaining. It needs to work with the "upper limit weight". Press the tare key TARE or the selection key SELECT to enter upper and lower limit weight, and press the confirmed key ENTER to confirm..



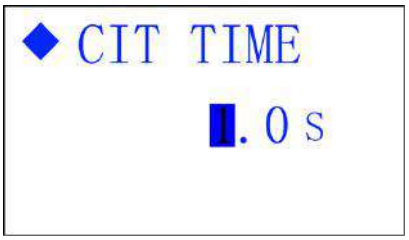
4.5.7 Upper limit weight

In the filling mode, this parameter is valid, and it is used to judge whether the tare weight is qualified, and the unqualified means there is material remaining. Need to work with "lower limit weight". Press the tare key TARE or the selection key SELECT to enter upper limit, then press the ENTER key to confirm.



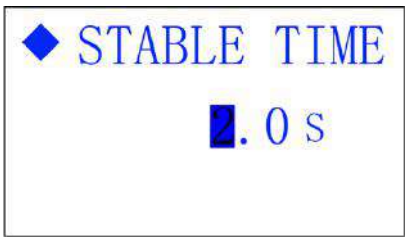
4.5.8 Forbid time

The parameter here is to prevent the instability of the scale caused by the mechanical action when the valve is opened. That is, after issuing the command to open the valve, during this period of time, the controller does not perform weight comparison and judgment. Press the tare key TARE or the selection key SELECT to enter forbid time, then press the ENTER key to confirm. The range is 0-9.9s.



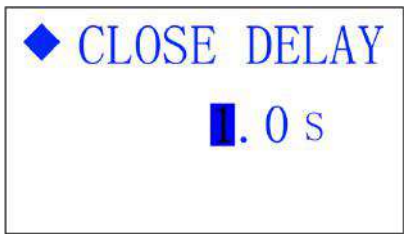
4.5.9 Stable time

In order to ensure the correctness of the accumulated data after the end of the feeding, the parameter here needs to be delayed for a while, and the accumulated value will be counted after the scale is stabilized. Of course, in order to increase the speed, if there is no need to accumulate data, this parameter can be set to 0. The time range is 0~9.9S. Press the tare key TARE or the selection key SELECT to enter the value, then press the ENTER key to confirm.



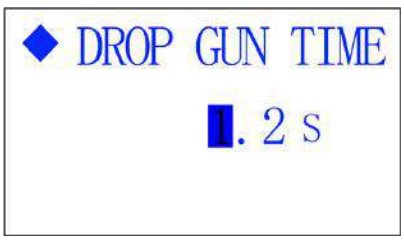
4.5.10 Batching door closing time

In order to ensure the reliable closing of the material door after discharging, this parameter needs to delay a little time so that the material door has sufficient time to close. The time range is 0~9.9S. Press the tare key TARE or the selection key SELECT to enter the value, then press the ENTER key to confirm.



4.5.11 Filling nozzle drop time

In the filling mode, since there is no need to use proximity switch, it is necessary to set a descent time of the filling gun to ensure that the valve is opened after the filling gun is in place. This parameter should be set according to the actual situation. The time range is 0~9.9S. Press the tare key TARE or the selection key SELECT to enter the value, then press the ENTER key to confirm.

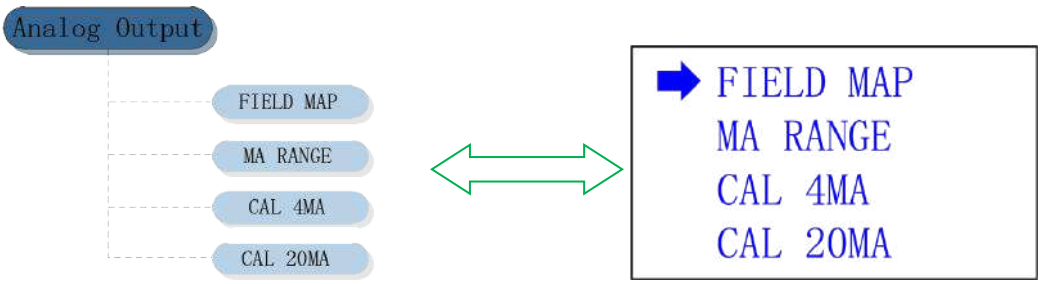


4.5.12 Power down backup

This parameter is only valid for the three-material batching mode.

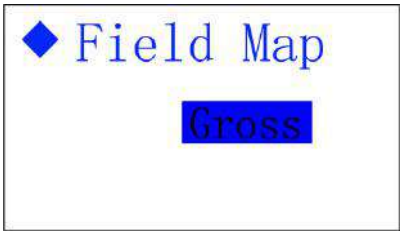
4.6 Analog setting

This menu includes the analog output settings of the module, and this menu is only available for Y200_DA.



4.6.1 Mapping object

Set the weighing data of the scale corresponding to the analog output, and you can select the “net weight” and “gross weight”. Press the tare key TARE or the select key SELECT to select the corresponding object, then press the ENTER key to confirm.

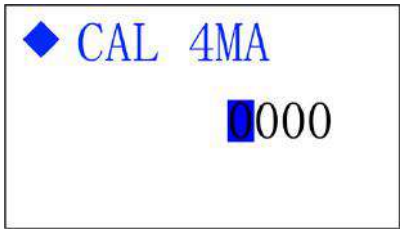


4.6.2 Current range

Set the current range of the analog output, you can choose "0~20mA", "4~20mA" and "0~24mA", Press the tare key TARE or the select key SELECT to select the current range, then press the ENTER key to confirm.

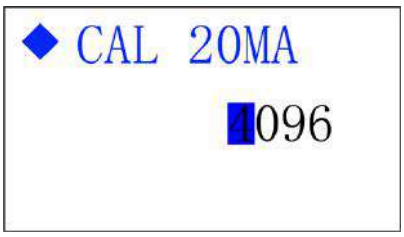
4.6.3 Zero adjust

The input range is 0~4095, According to the actual situation, users can press the tare key TARE or the select key SELECT to input the zero value, then press the ENTER key to confirm.

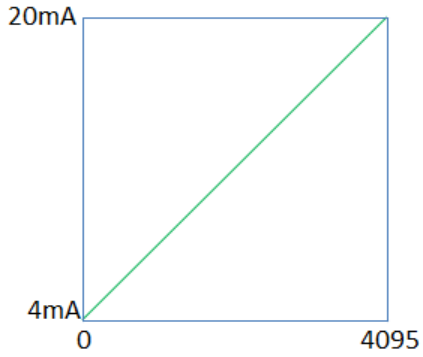


4.6.4 Full scale adjust

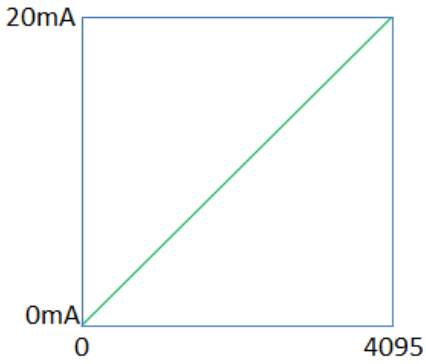
The input range is 0~4095, According to the actual situation, users can press the tare key TARE or the select key SELECT to input the full scale value, then press the ENTER key to confirm.



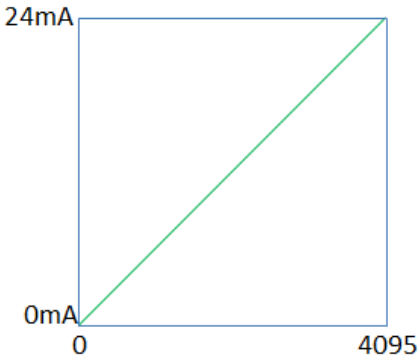
The following is the linear relationship corresponding to the analog output, users can select the current range according to the actual situation.



4～20mA Output linear relationship



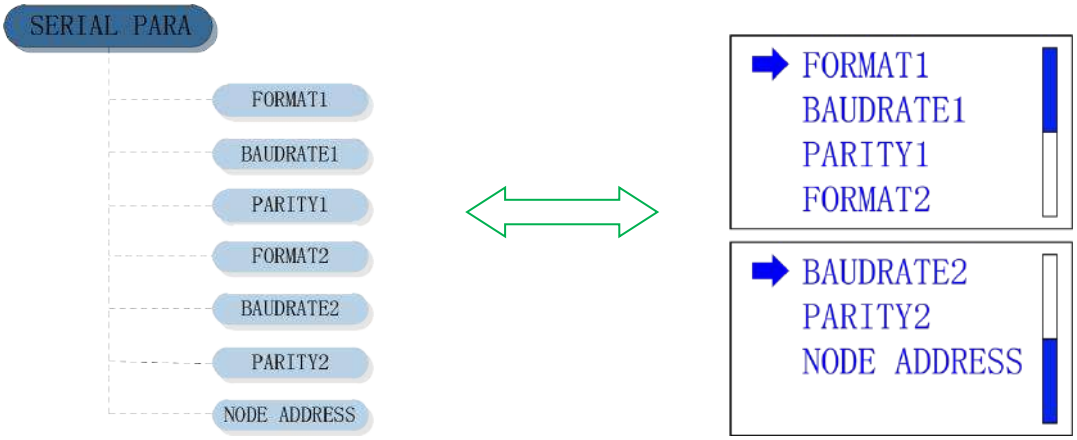
0～20mA Output linear relationship



0～24mA Output linear relationship

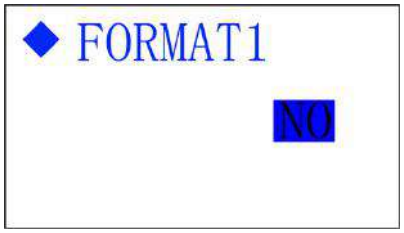
4.7 Serial parameters setting

This menu includes the serial port parameter settings of the module.



4.7.1 Serial 0 format

Set the output mode of serial port 0 here. The available output modes are "no", "continuous", and "Modbus Rtu". For the data output format, please refer to Appendix B.According to the actual situation, press the tare key TARE or the select key SELECT to select the format, then press the ENTER key to confirm.



4.7.2 Serial 0 baud rate

Set the baud rate of serial port 0 here. The available baud rates are "1200bit/s", "2400bit/s", "4800bit/s", "9600bit/s", "19200bit/s", "115200bit/s", According to the actual situation, press the tare key 

or the select key 

to select the baud rate, then press the 

key to confirm.

4.7.3 Serial 0 parity check

Set the parity bit of serial port 0 here. The optional parity bits include "8 bits no parity," "8 bits odd parity", and "8 bits even parity". According to the actual situation, press the tare key 

or the select key 

to select the parity check, then press the 

key to confirm.

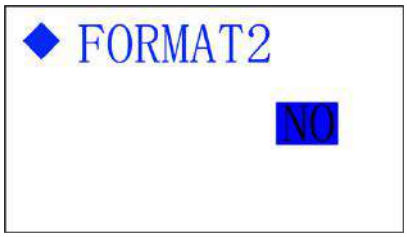
4.7.4 Serial 1 format

Set the output mode of serial port 1 here. The available output modes are "no", "continuous", and "Modbus Rtu". For the data output format, please refer to Appendix B.According to the actual situation, press the tare key 

or the select key 

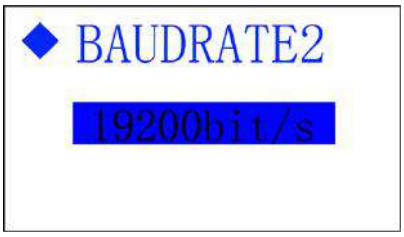
to select the format, then press the 

key to confirm.



4.7.5 Serial 1 baud rate

Set the baud rate of serial port 1 here. The available baud rates are "1200bit/s", "2400bit/s", "4800bit/s", "9600bit/s", "19200bit/s", "115200bit/s", According to the actual situation, press the tare key TARE or the select key SELECT to select the baud rate, then press the ENTER key to confirm.



4.7.6 Serial 1 parity check

Set the parity bit of serial port 1 here. The optional parity bits include "8 bits no parity," "8 bits odd parity", and "8 bits even parity". According to the actual situation, press the tare key TARE or the select key SELECT to select the parity check, then press the ENTER key to confirm.

4.7.7 Node address

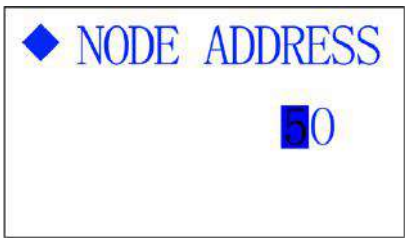
Set the node address of serial port 1 here. Since the physical interface of serial

port 1 is RS485, when serial port 1 is set to Modbus Rtu, this module can communicate with the host computer as a slave. The address range is from 1 to 99, According to the actual situation, press the tare key 

or the select key 

to select the node address, then press the 

key to confirm.

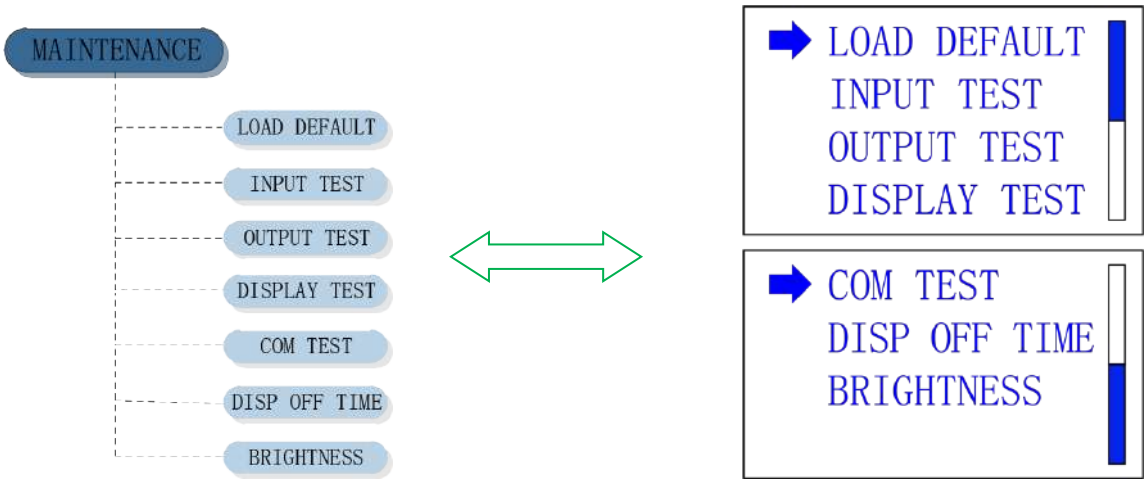


Chapter5 Maintain and Service

This chapter introduces the detailed maintenance and services of Y200.

5.1 Maintain and service

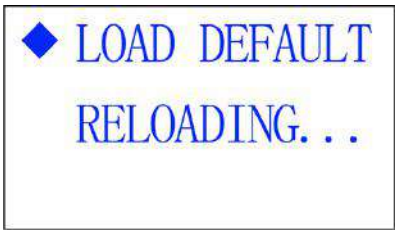
This part includes the maintenance of Y200 module.



5.1.1 Factory reset

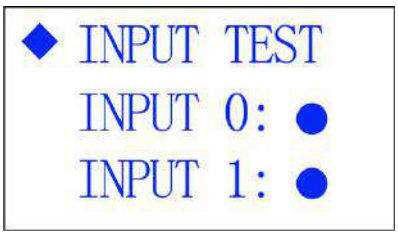
This menu can reset all parameters to factory default value(refer to attached default parameters in Appendix A). Press TARE or SELECT button to choose“√”,

Press confirm key ENTER , “Reloading….” Appears. After completion, it will automatically return to the previous menu.



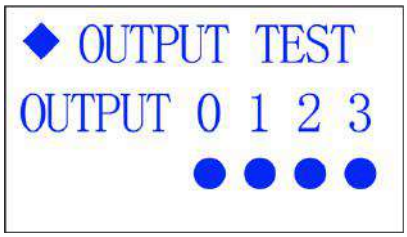
5.1.2 Input port test

This menu is used to test the input port of module. When the input port is valid, it displays“●”, otherwise, it displays“○”.



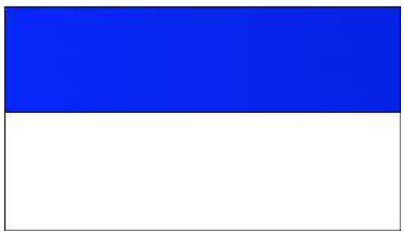
5.1.3 Output port test

This menu is used to test the output port of module. The module is turned on every 2 seconds in sequence from OUT0 to OUT3.



5.1.4 Display test

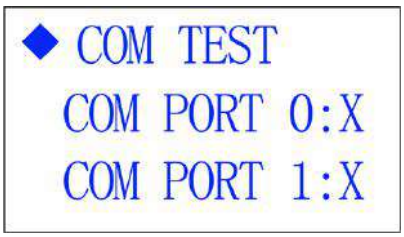
This menu is used to test the display. It displays dynamically from the top of the screen down to the full screen, and you can check whether the display is intact.



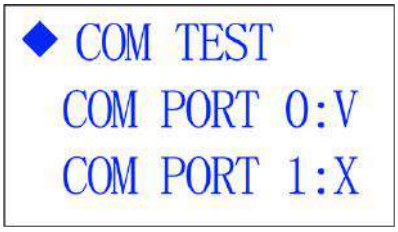
5.1.5 Serial test

This menu can test the hardware failure of the sending and receiving ends of

serial port0 and serial port1.



When the serial port of the module automatically sends a character string, you can have the sending end and the receiving end of the serial port short connected. If the serial port is intact, the characters automatically sent by the module can be received, and "√" will be displayed on the screen. Please note that this test need to be completed with the help of RS485 to RS322 converter since the serial port 1 is RS485 half-duplex.



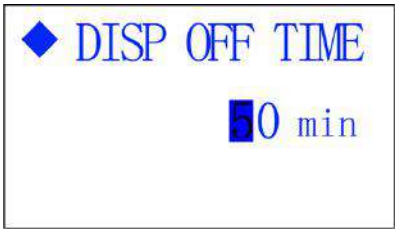
5.1.6 Screen save time

This menu is used to set the display off time, which could effectively increase the lifetime of screen. Press Tare 

or select 

button to set the display off time. Press Confirm key 

to enter. The setting range is 0~99 min, “0” represents the display off function.



5.1.7 Brightness adjust

This menu is used to set the brightness of display. Decrease the screen brightness is helpful to increase the screen lifetime. Press Tare 

or select

SELECT button to set the display brightness, Press Confirm key ENTER to enter. The setting range is 0~9 level, the larger the number, the brighter the display.

Appendix A Menu Diagram

A.1 Default Parameters

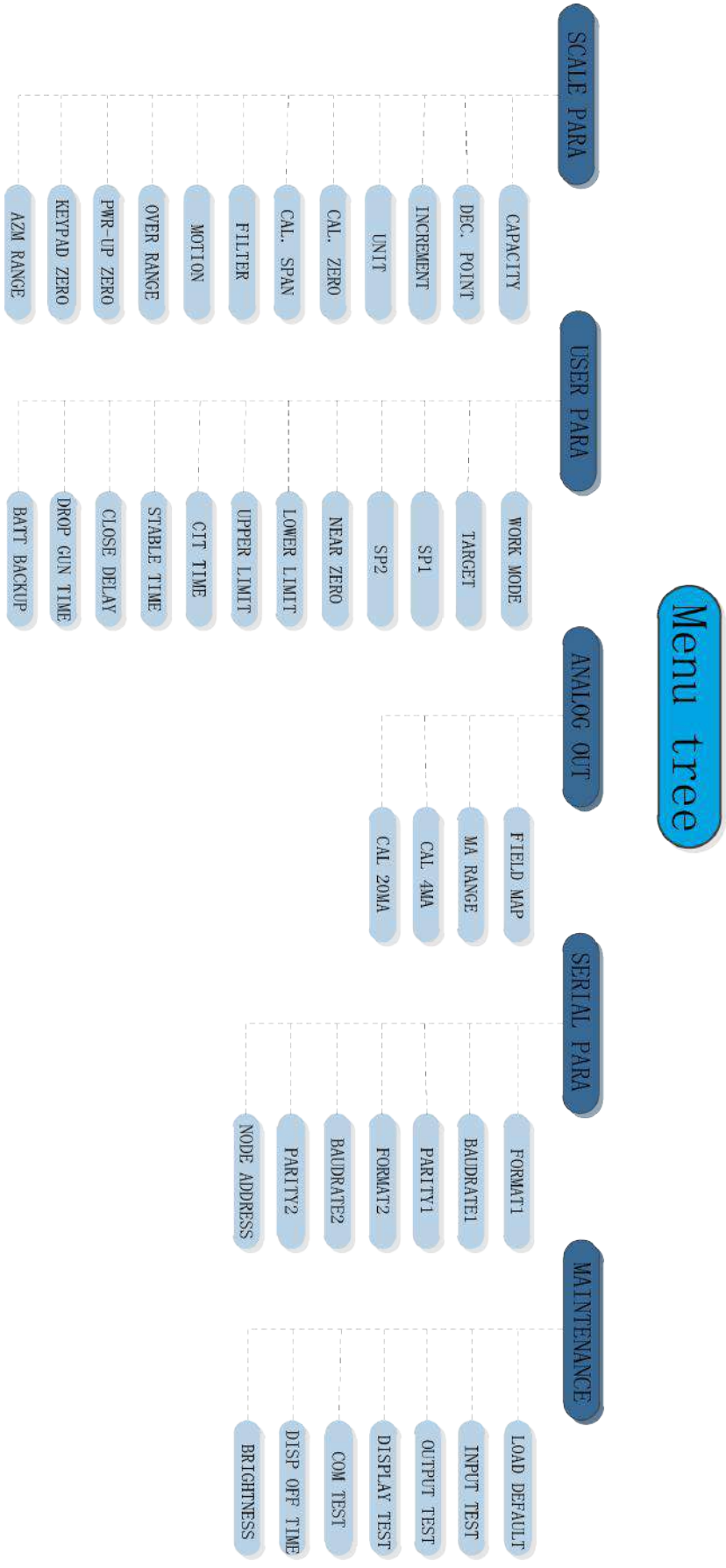
Please refer to below default parameters of Y200 module:

Ⅰ MENU	ⅡMENU	DEFAULT VALUE	PARAMETER
SCALE PARA.	CAPACITY	10	1~100000
	DEC. POINT	3	0 dec. 1 dec. 2 dec. 3 dec. 4 dec.
	INCREMENT	1	1 2 5 10 20 50
	UNIT	KG	g kg
	CAL. ZERO	X	
	CAL. SPAN	X	
	FILTER	5	1~9 level
	MOTION	3	3~6 divisions
	OVER RANGE	20%	2% 10% 20%
	PWR-UP ZERO	20%	2% 10% 20%
	KEYPAD ZERO	20%	2% 10% 20%
	AZM RANGE	2	1-5 divisions
USER PARA.	WORK MODE	BASIC	BASIC WEIGH IN WEIGH OUT

			GROSS FILL NET FILL CHECK BATCH AIMO（AUTO IN/MANUAL OUT）
	TARGET	2.000kg	
	SP1	0.5	
	SP2	0.01	
	NEAR ZERO	0.05	
	LOWER LIMIT	2	
	UPPER LIMIT	2	
	CIT TIME	1	0～99s
	STABLE TIME	2	0～99s
	CLOSE DELAY	2	0～99s
	DROP GUN TIME	2	0～99s
ANALOG OUT	FIELD MAP	NET	G/B NET
	MA RANGE	4～20mA	0～20mA 4～20mA 0～24mA
	CAL 4MA	X	
	CAL 20MA	X	
SERIAL PARA.	FORMAT1	NO	NO CONTINUOUS Modbus Rtu
	BAUDRATE1	19200bit/s	1200bit/s 2400bit/s 4800bit/s 9600bit/s 19200bit/s

			115200bit/s
	PARITY1	8/NONE	8/NONE 8/EVEN 8/ODD
	FORMAT2	NO	NO CONTINUOUS Modbus Rtu
	BAUDRATE2	19200bit/s	1200bit/s 2400bit/s 4800bit/s
			9600bit/s 19200bit/s 115200bit/s
	PARITY2	8/NONE	8/NONE 8/EVEN 8/ODD
	NODE ADDRESS	1	1～99
MAINTENANCE	LOAD DEFAULT	X	
	INPUT TEST	X	
	OUTPUT TEST	X	
	DISPLAY TEST	X	
	COM TEST	X	
	DISP OFF TIME	1	0～99 min.
	BRIGHTNESS	5	1～9 level

A.2 Menu Tree


Menu tree
SCALE PARA
CAPACITY
DEC. POINT
INCREMENT
UNIT
CAL. ZERO
CAL. SPAN
FILTER
MOTION
OVER RANGE
PWR-UP ZERO
KEYPAD ZERO
AZM RANGE
USER PARA
WORK MODE
TARGET
SP1
SP2
NEAR ZERO
LOWER LIMIT
UPPER LIMIT
CTT TIME
STABLE TIME
CLOSE DELAY
DROP GUN TIME
BATT BACKUP
ANALOG OUT
FIELD MAP
MA RANGE
CAL 4MA
CAL 20MA
SERIAL PARA
FORMAT1
BAUDRATE1
PARITY1
FORMAT2
BAUDRATE2
PARITY2
NODE ADDRESS
MAINTENANCE
LOAD DEFAULT
INPUT TEST
OUTPUT TEST
DISPLAY TEST
COM TEST
DISP OFF TIME
BRIGHTNESS

Appendix B Data Format

This chapter introduces the communication information of Y200 module.

B.1 Serial interface parameters

Y200 provides two standard serial interfaces, one is RS232 interface with three wires, TXD, RXD and COM. The port is also used to download the new Y200 software. One is RS485 interface, two-wire system. 485A, 485B and COM.

Y200 provides two data output modes: continuous mode and MODBUS output mode.

B.2 Continuous output format

Y200's continuous output template can transmit scale data and scale information to remote devices (such as PC or display).

Continuous Mode															
STX	A	B	C	X	X	X	X	X	X	X	X	X	X	X	CR
1	2			3						4					5

Among them are：

1. < STX > ASCII start character (02h).
2. Status words A, B, C.
3. Display the weight. It may be gross weight or net weight. 6 digits without sign and decimal point.
4. Tare, 6-digit number without symbol and decimal point.
5. < CR > ASCII carriage return (ODH).

	Status word A	Status word B	Status word C
Bit0	010： No decimal 011： 1 decimal	0 =Gross weight 1 = Net weight	1 = OUT0 Effective
Bit1	100： 2 decimal	1 = Weight < 0	1 = OUT1 Effective

Bit2	101：3 decimal 110：4 decimal	1 = Upper and lower limit overload	1 = OUT2 Effective
Bit3	Constant to 0	0 = static state , 1 = dynamic	1 = OUT3Effective
Bit4	Constant to 0	unit：0 = kg, 1 = g	spare
Bit5	Constant to 1	Constant to 1	Constant to 1
Bit6	Constant to 0	Constant to 0	1 = INO Effective
Bit7	Constant to 0	Constant to 0	1 = IN1 Effective

B.3 MODBUS output format

Y200 supports MODBUS network communication protocol and has rich exchange functions. The slave station of this module can communicate with the upper computer in two directions.

The following is the address mapping table of Y200 in MODBUS:

Map address		Description and notes (read only)
40001		Current displayed weight（-32767 ～ +32767）
40002	Bit0	1 = Net weight， 0 = Gross weight
	Bit1	1 = Weight is negative，0 = Weight is positive
	Bit2	1 = dynamic，0 = Steady-state
	Bit3	1 = overload，0 = Non overloading
	Bit4	1 = overweight
	Bit5	1 = underweight
	Bit6	1 = IN0 Input effective
	Bit7	1 = IN1 Input effective
	Bit8	1 = OUT0 Input effective
	Bit9	1 = OUT1 Input effective
	Bit10	1 = OUT2 Input effective
	Bit11	1 = OUT3 Input effective
	Bit12	0 = Stop 1 = In operation
40003		Total number of times. Power down without saving
40004		Total weight (signed long integer, read-only), not saved in case of power failure
40005		
40006		Last tare
40007		Last net weight

40008	The current display weight (signed long integer, read-only) is increased in version 1.01 In actual use, please read the signed long weight data when the index calibration exceeds 32767.
40009	

Map Address	Description and notes (read only)
40010	Maximum weighing（Capacity）
40011	Current decimal position 0：No decimal 1：1 decimal place 2：2 decimal place 3：3 decimal place 4：4 decimal place
40012	Current increment（1、 2、 5、 10、 20、 50）
40013	Unit（0 = kg 1 = g）
40014	Filter level（1～9），The larger the value, the more stable the AD value of the module.
40015	Dynamic detection range（0d～5d）
40016	Automatic zero tracking range（0d～5d）
40017	Manual zero range（0～2） 0：Capacity×0%。 1：Capacity×2%。 2：Capacity×10%。
40018	Overload display range（0～2） 0：Capacity×0%。 1：Capacity×2%。 2：Capacity×10%。
40019	Application mode（0～6） 0：No application 1：Incremental mode 2：Decrement mode. 3：Net weight filling. 4：Gross weight filling. 5：Upper and lower limit mode. 6：3 material batching
40020	Target weight（Range0～Capacity），Without decimal point
40021	SP1 (fast filling advance)（Range0～Capacity），Without decimal point
40022	SP2 (slow filling advance)（Range0～Capacity），Without decimal point
40023	Target weight 2（Range0～Capacity），Without decimal point
40024	Material 2 SP1（Range0～Capacity），Without decimal point
40025	Material 2 SP2（Range0～Capacity），Without decimal point

40026	Target weight 3（Range0～Capacity），Without decimal point
40027	Material 3 SP1（Range0～Capacity），Without decimal point
40028	Material 3 SP2（Range0～Capacity），Without decimal point
40029	Empty scale
40030	Lower limit weight
40031	Upper limit weight
40032	Time to forbid comparison 0.0～9.9s
40033	Weight stabilization time 0.0～9.9s
40034	Delayed closing time 0.0～9.9s Corresponding to 0.0-9.9 seconds. Adapt to incremental mode
40035	Time of dropping filling gun
40036	Power down memory backup 0：close 1：open
40037	1st material feed value (three material batching mode, read-only) added in version 1.01
40038	2nd material feed value (three material batching mode, read-only) added in version 1.01
40039	3rd material feed value (three material batching mode, read-only) added in version 1.01
40069	Calibration information read. *Read only after performing scale calibration once.* 1: Zero calibration succeeded. 2: Calibration of loading point succeeded. 3: The write weight is too small when the load point is calibrated. 4: When the load point is calibrated, the write weight is too large. 5: When calibrate the loading point, the loading weight is too small.

Map address	Description and notes (write only)
40070	Communication scale. The weight value written is set to WT without decimal point.
	Zero calibration when wt = 0. Before writing, unload the materials on the scale to ensure that the scale is empty. If

		capacity × 1% ≤ wt ≤ capacity, it is the calibration of loading point. WT is the weight of the loading weight. If the calibration is successful, 40069 can be read.
40071	Bit0	1 = Zero clearing
	Bit1	1 = Tare
	Bit2	1 = clean Tare
	Bit3	1 = Start filling
	Bit4	1 = Emergency stop
	Bit5	1 = Clear accumulation. (value of 40003-40007)
	Bit6	1 = Factory default reset

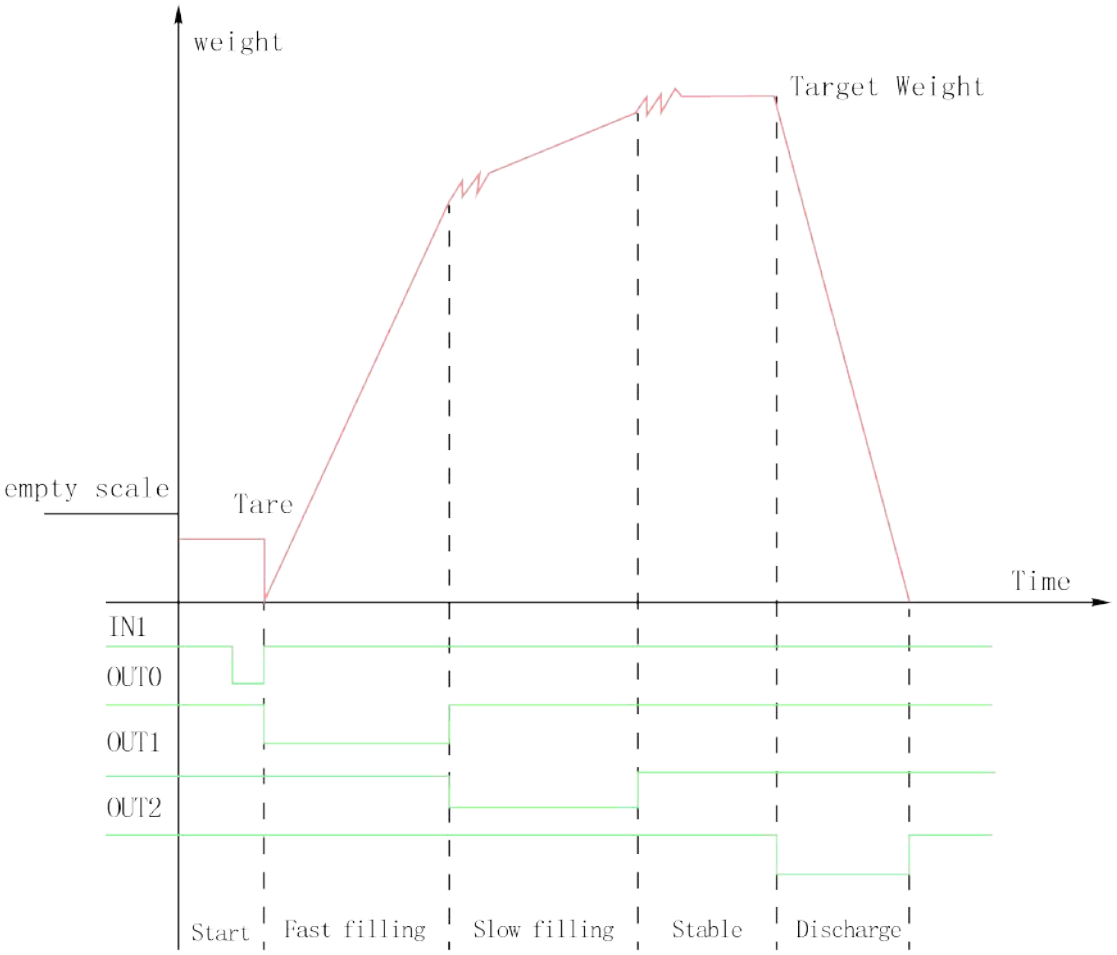
Appendix C Application Workflow Chart

This chapter introduces the work mode flow chart of Y200_IO module

C.1 No application

This mode IO does not have any work mode.

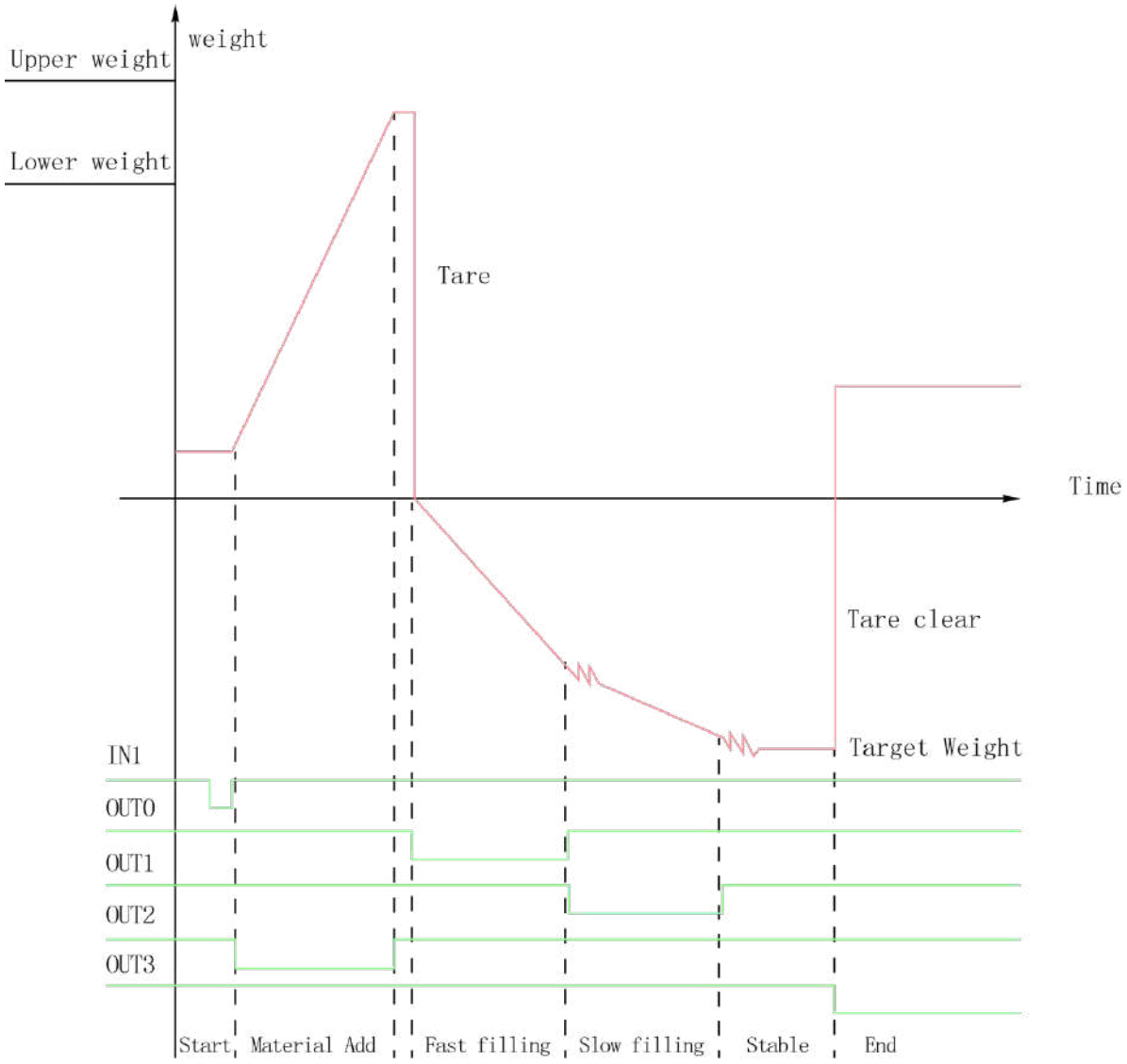
C.2 Incremental mode



Increment Mode Time Diagram

IO PORT	IN0	IN1	OUT0	OUT1	OUT2	OUT3
Function	Start Input	Emergency Stop Input	Fast Filling Output	Slow Filling Output	Material Door Output	-

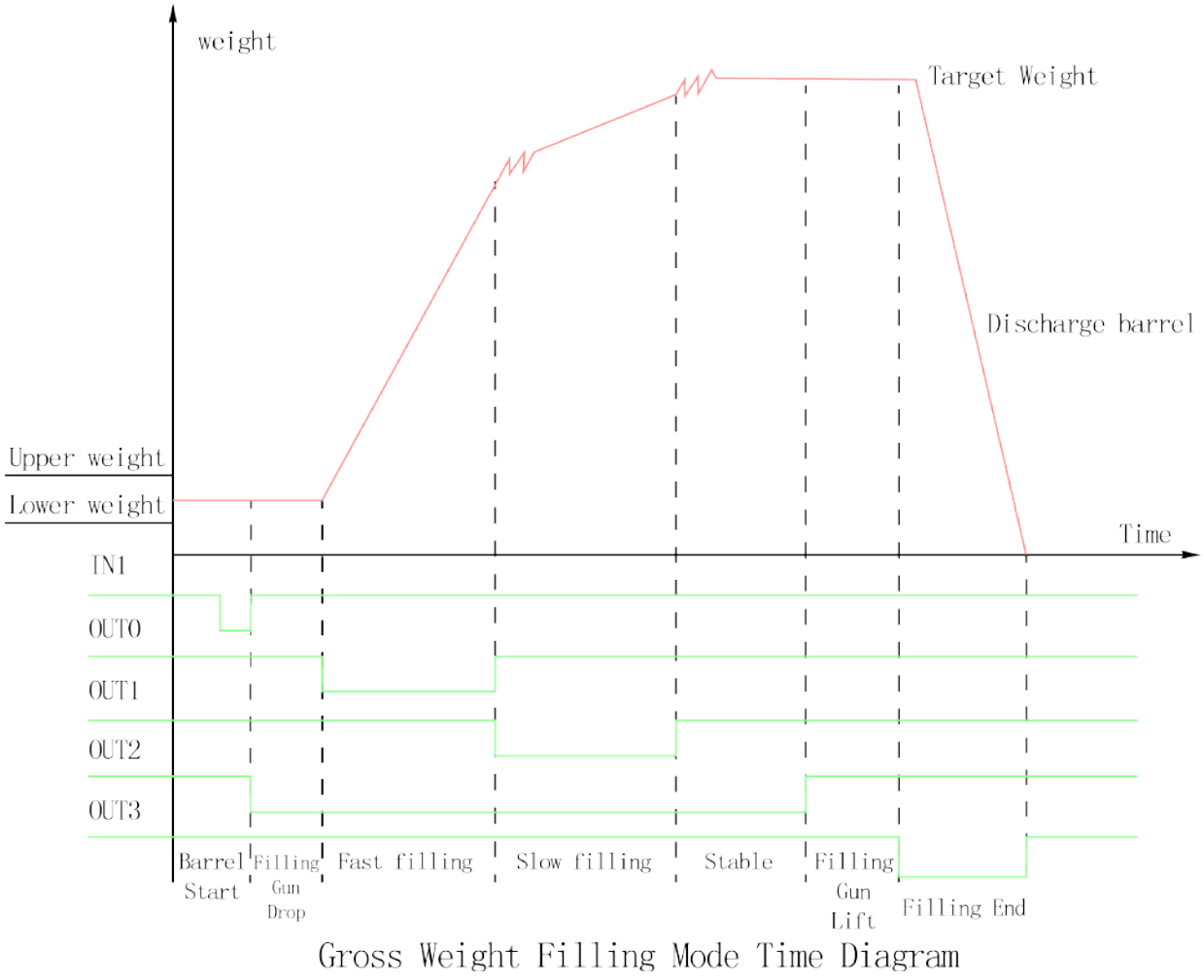
C.3 Decrement mode



Decrement Mode Time Diagram

IO PORT	IN0	IN1	OUT0	OUT1	OUT2	OUT3
Function	Start Input	Emergency Stop Input	Fast Filling Output	Slow Filling Output	Add Material Output	End of Material Add Output

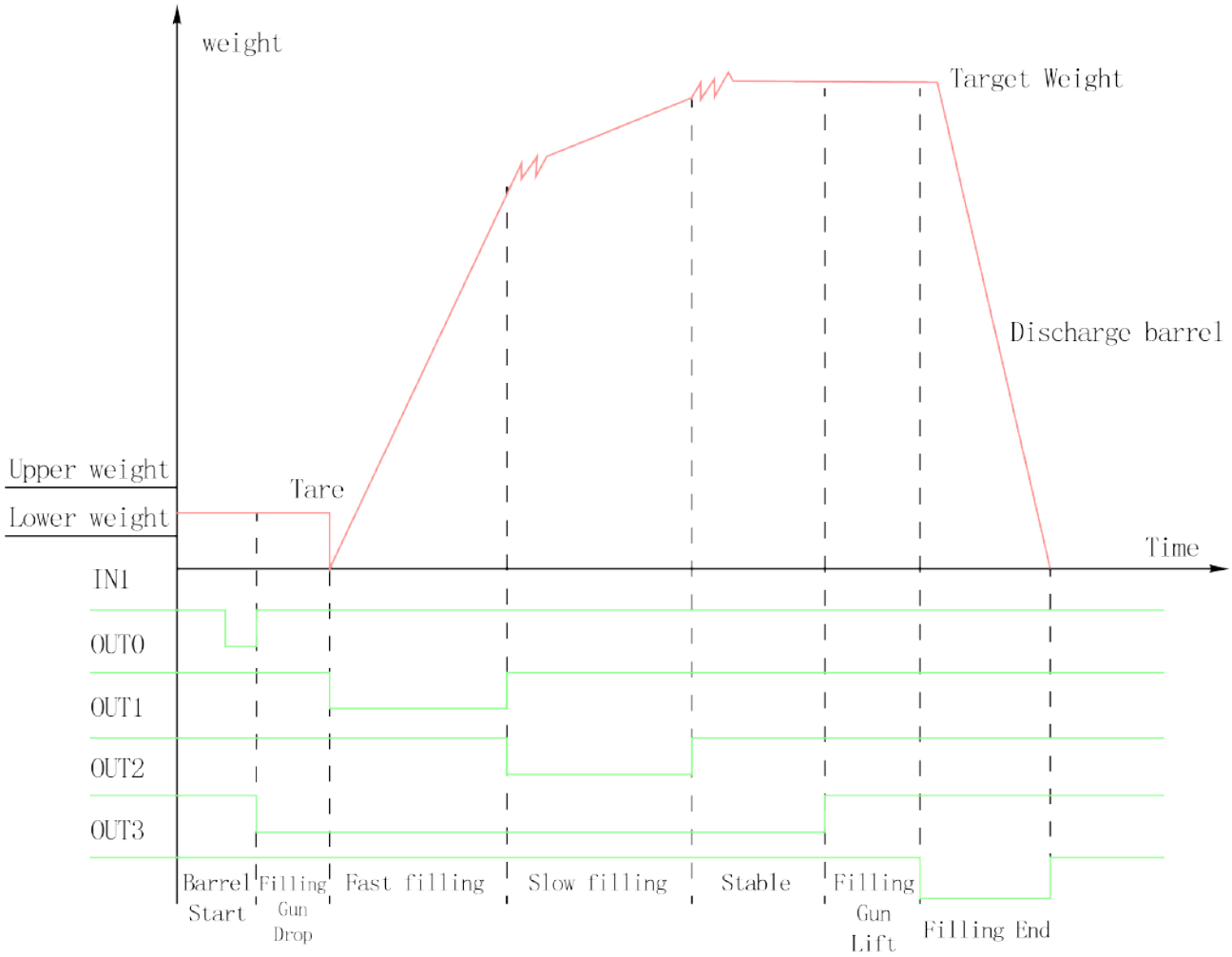
C.4 Gross weight filling



Gross Weight Filling Mode Time Diagram

IO PORT	IN0	IN1	OUT0	OUT1	OUT2	OUT3
Function	Start Input	Emergency Stop Input	Fast Filling Output	Slow Filling Output	Filling Gun Drop Lift Output	Filling End Output

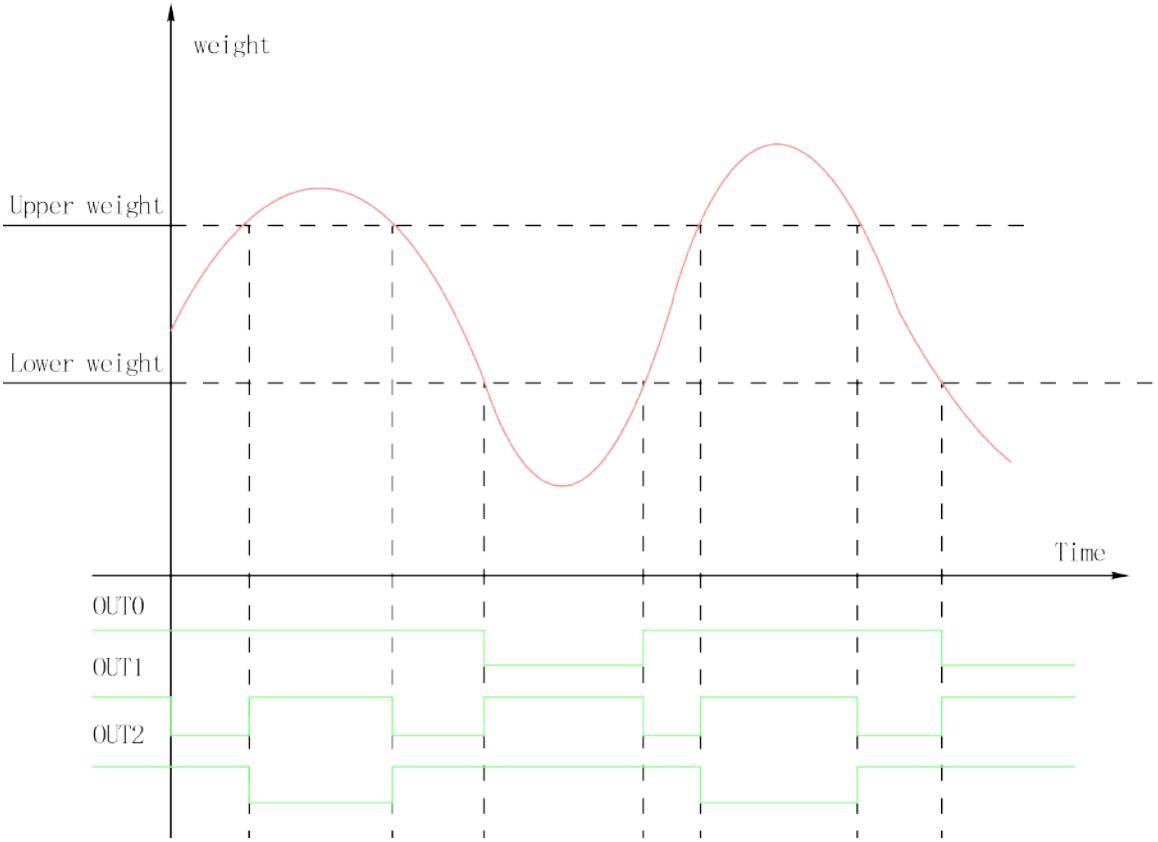
C.5 Net weight filling



Net Weight Filling Mode Time Diagram

IO PORT	IN0	IN1	OUT0	OUT1	OUT2	OUT3
Function	Start Input	Emergency Stop Input	Fast Filling Output	Slow Filling Output	Filling Gun Drop Lift Output	Filling End Output

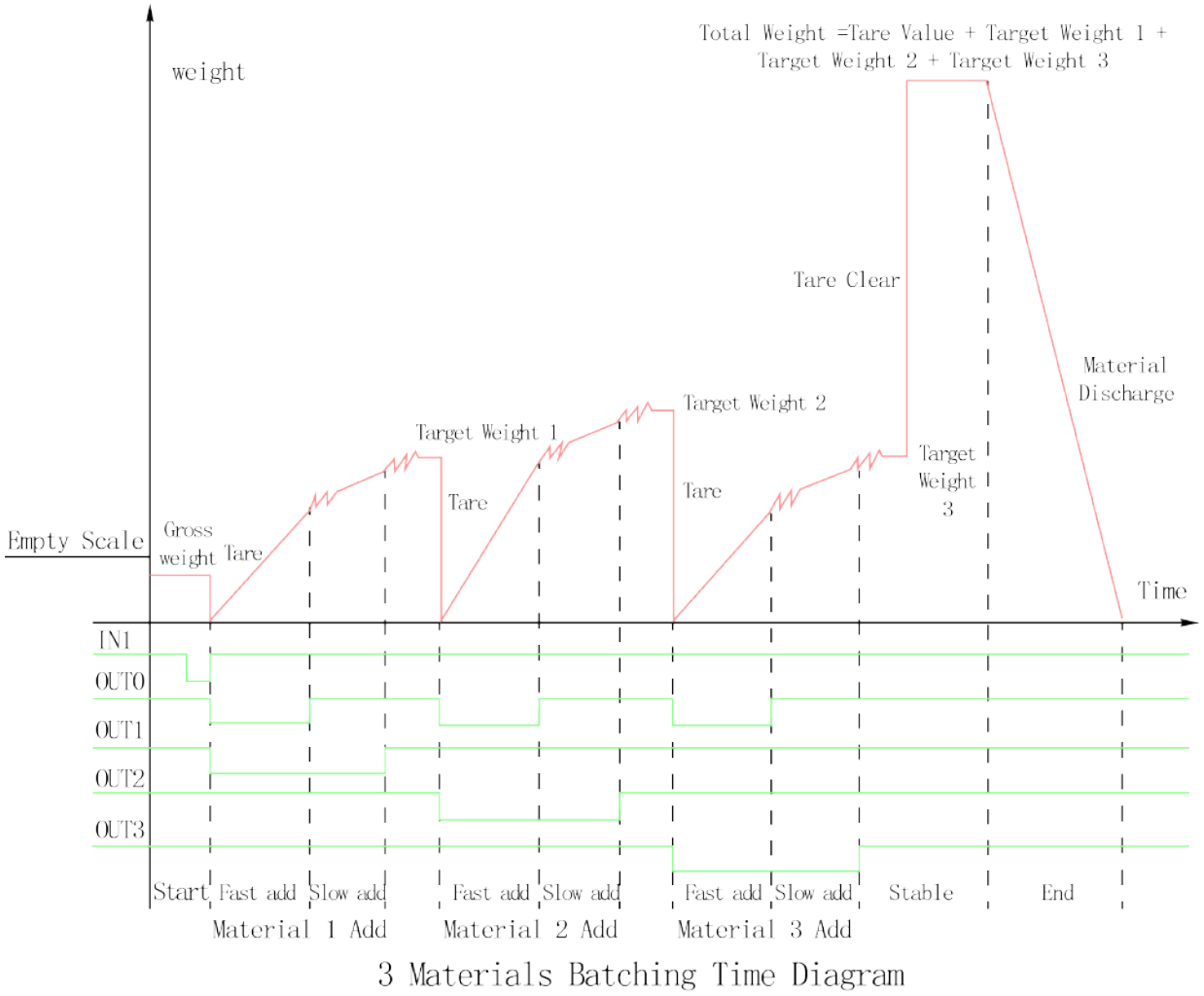
C.6 Upper limit and lower limit



Upper/Lower Weighing Time Diagram

IO PORT	IN0	IN1	OUT0	OUT1	OUT2	OUT3
Function	-	-	Less Weight Output	Qualified Output	Over Weight Output	-

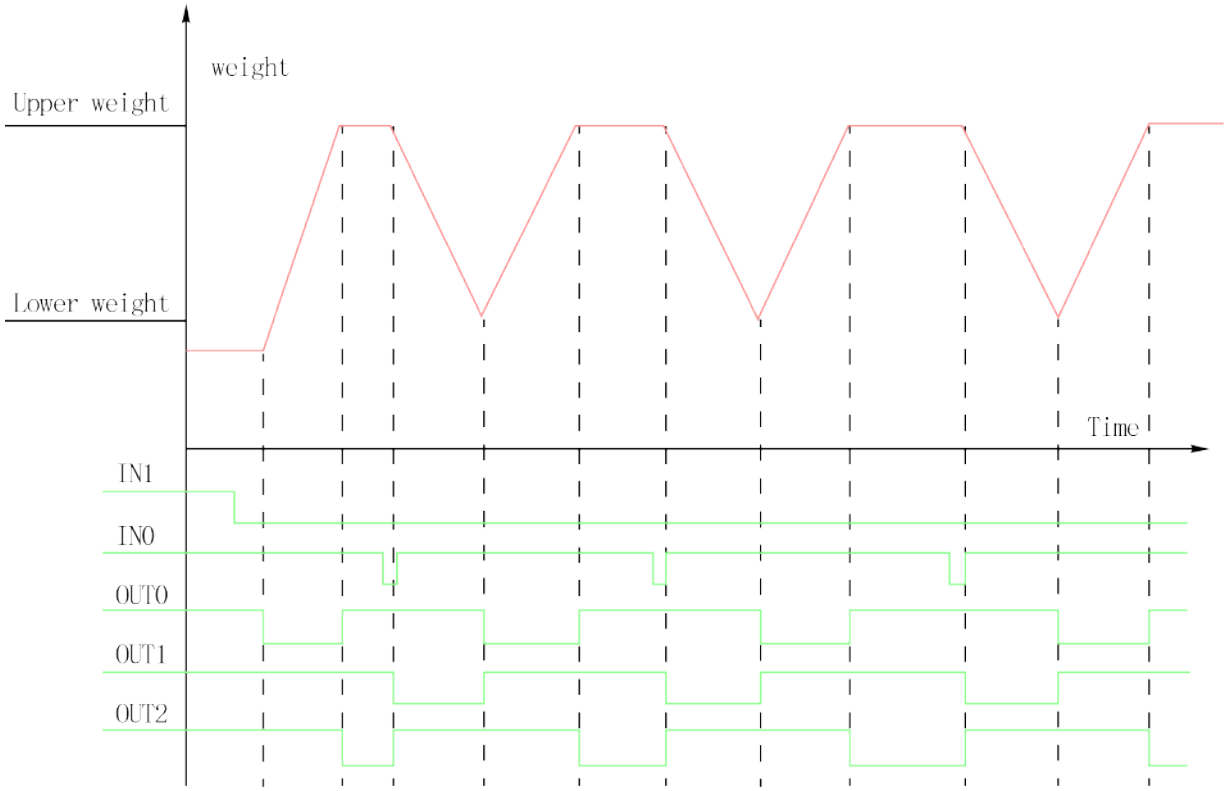
C.7 3 materials batching



3 Materials Batching Time Diagram

IO PORT	IN0	IN1	OUT0	OUT1	OUT2	OUT3
Function	Start Input	Emergency Stop Input	Fast Filling Output	Material 1 Slow Filling Output	Material 2 Slow Filling Output	Material 3 Slow Filling Output

C.8 AIMO



IN0: Input signal of discharging start
In1: Input signal of running permit

Out0: Auto feeding output signal
Out1: Discharging output signal
Out2: Feeding end, discharging output signal allowed.

Auto Feeding/Manual Discharge Time Diagram

IO Port	IN0	IN1	OUT0	OUT1	OUT2	OUT3
Functions	Start Input	Running Input	Auto Feeding Output	Discharge Output	Auto Feeding End Output	-

Appendix D Software Upgrade

This chapter introduces the software upgrade information of Y200 module.

D.1 Software update

The software of Y200 module can be easily updated with a computer. Each time the software is upgraded, its version number will be updated accordingly.*(The software version is upgraded without prior notice)*

Note: When the software is updated, its internal system setting parameters may be changed, So before updating the software, please back up all the setting parameters.

D.2 Cable connection

Connect to the serial port of Y200 module through the serial port of the computer. If the computer has no serial port, you can use a USB-RS232 adapter cable.

The serial port connection is as follows:

Controller serial port	Computer serial port	
	9pins	25pins
TXD	2	3
RXD	3	2
COM	5	7

D.3 Update steps

This module uses Flash Magic application software to update Y200 software. This application software can be downloaded from the official website of

Flash Magic: http://www.flashmagictool.com/

Perform the upgrade process as follows:

1.Power off the Y200 module.

2、Press and hold the ENTER key on the panel and then power on the module. At this time, the module enters the download mode and the screen is blank.

3、Open the Flash Magic software.

4、Run the software and select the chip model, serial port number, baud rate, interface type, and crystal oscillator respectively.

Setting as follows:

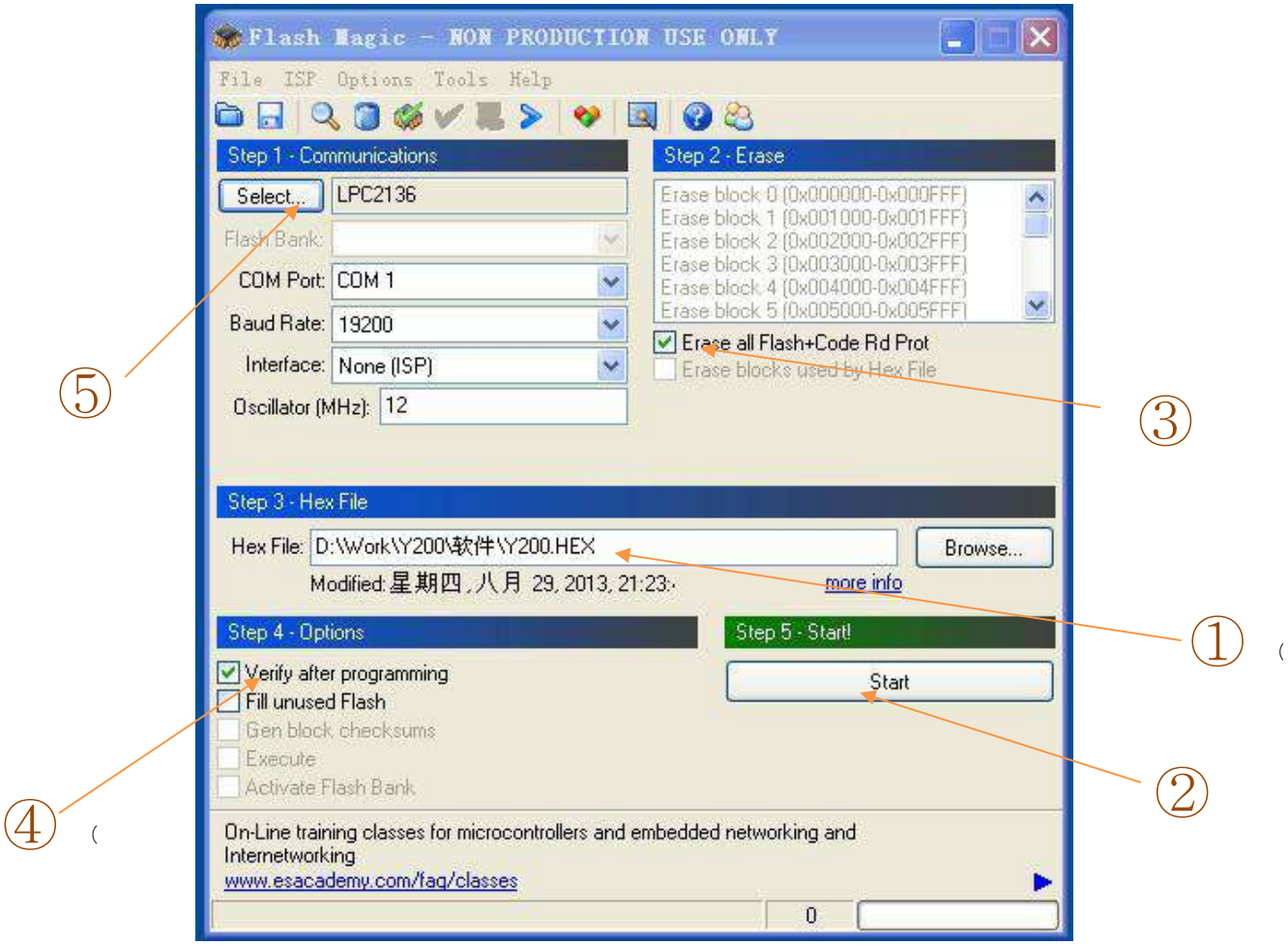
Chip model: LPC2136.

Serial number: Choose according to the serial number connected of your computer.

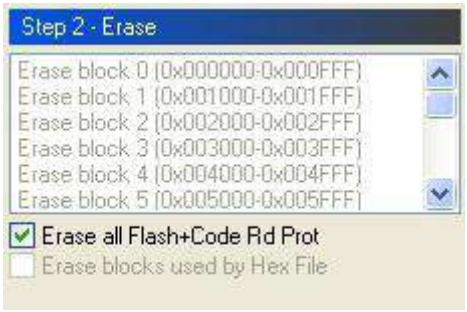
Baud rate: 19200 (you can also choose down).

Interface type: ISP

Crystal: 12

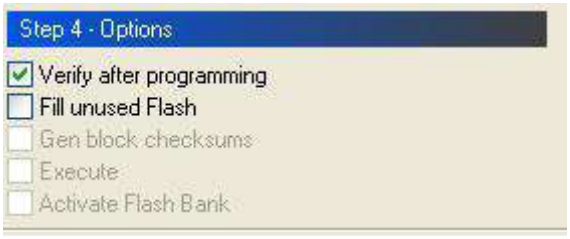


5、Choose to erase all Flash.

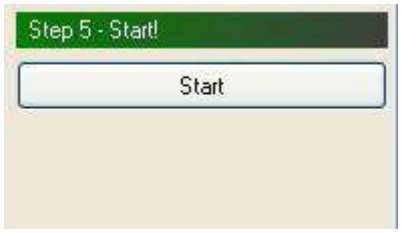


6. Select the HEX file to be burned.

7. Select to verify.



8. The setting is completed till now. After clicking Start, you can start to update the selected HEX file to the CPU and wait till it's finished.



9. After the download complete, power on again.


VALUE EACH GRAM
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