



Conveyor Belt Check Weigher

Operator's Manual



Read before Operation

Before operation this machine, please read this manual thoroughly, and keep a copy with the machine for future reference. This manual is to be considered part of your machine.

Model: NG-709



Preface

This manual describes the operation of the standard machine system startup, weight setting, calibration, and system setting.

In order to ensure the long-term safe and efficient normal operation of the equipment, please read carefully before operating or setting the equipment.

The installation and use conditions of this equipment are as follows:

project	condition
end-use temperature	-10 C to 40 C
humidity	35 to 85% (not exposed)
installation site	Please choose a strong and stable site for installation
source	AC220V $\pm$ 10% single phase 50/60Hz
landing	Category 3 grounding or equivalent conditions



Dynamic inspection device

Chapter 1-Safety Notes

The construction site where the equipment is installed should be fully supported by the strength of the equipment and its surrounding facilities, and consideration should be given

To the convenience of daily operation and the adequate lighting required for after-sales service.

Danger: Do not place the weigher in an environment that produces flammable gases and is flammable or explosive. The equipment

No explosion-proof function is provided.



Power supply is connected according to the voltage in the user's local area

Standard series weighbridge requirements: AC220V (rated voltage variation within $\pm 10\%$)
single phase 50/60Hz,

Important: The standard series weigher requires a reliable and permanent grounding.

Important: Please be sure to compare and verify the goods taken out of the wooden crate with the packing list provided by the carrier

Equipment handling Please provide complete transportation equipment for handling, pay attention to the center of gravity of the equipment during handling.

Be sure to secure the equipment firmly to the transport platform or seat frame until it is moved to the installation site.

Danger: In the process of handling and lifting the equipment, if the equipment is damaged due to improper use according to the correct usage specifications,

The site is difficult to repair, and it should be shipped back to the company for repair work if necessary. The return and repair costs shall be borne by your company.



Chapter 2-Precautions during operation

Note: When running the equipment, make sure that all electrical linkage equipment is working properly

Warning: Check the equipment before running. If not checked before running, the equipment may be damaged or damaged

Electrical part must be arranged for qualified professionals to install and maintain electrical equipment, and check the grounding device to

To prevent any person using the equipment from being threatened by fright, injury or death

Always keep the power off before adjusting, cleaning, lubricating and maintaining the equipment

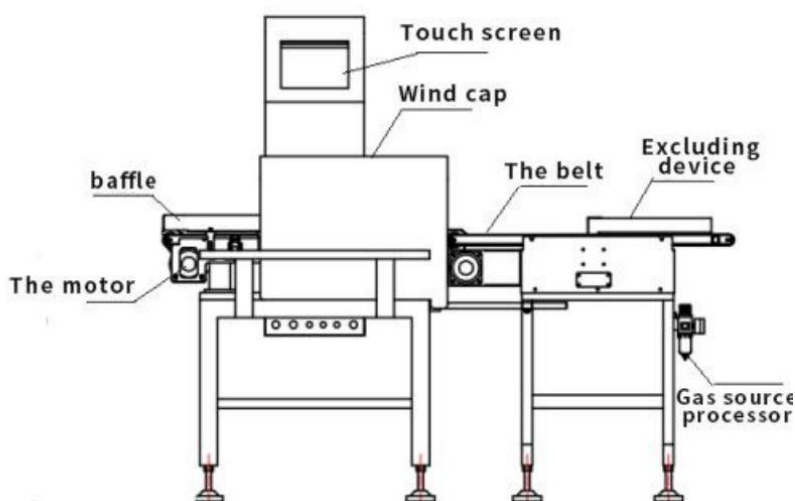
In the electrical system, there should be no changes or additions. If you have any questions about changes, please contact our company's technical staff first.

The technical department seeks solutions

Chapter 3-Dynamic checker summary

2.1 Host section description

The following is the diagram of NG-709 weigher:



(Weighing machine structure diagram)



Touch screen	Used to operate the operation/stop of the equipment, and adjust the parameters, weight, speed adjustment
Hurricane globe	The inner side is mainly the scale platform, which is used to block the wind generated outside and ensure the accuracy.
Any power-generating or power-driven machine	Drive drum, drive belt.
Guard	Adjust the width of the belt according to the size of the material.
Leather belt	Transport the material so that the material passes the scale smoothly.
Stripping unit	After weighing the scale, the weight is judged and the unqualified ones are removed (or the overweight or underweight ones are removed)
Source of energy	The gas cylinder is supplied with gas, and the cylinder pushes the rocker to complete the removal work.

Chapter I Installation matters

The dynamic weighbridge is a cost-effective weighing solution that delivers high-precision measurements at high speeds. While the user-friendly design of the online weighbridge makes installation straightforward, we recommend following these steps for optimal setup.

1.1 Technical parameters:

model	power	Calibration range	accuracy	velocity	Material width	Material length	product size
NG-709-G150	0.1KW	≤20g	±0.1g	100pcs/min	≤120mm	≤150mm	1030mm*555mm*1260mm



NG-709-150	0.1KW	≤200g	±0.2g~±0.5g	200pcs/min	≤120mm	≤150mm	1030mm*555mm*1260mm
NG-709-210	0.15KW	≤1000g	±0.3g~±1g	160pcs/min	≤180mm	≤300mm	1523mm*560mm*1262mm
NG-709-300	0.4KW	≤3000g	±0.5g~±3g	80pcs/min	≤270mm	≤300mm	1800m*855mm*1190mm
NG-709-400	0.4KW	≤10kg	±1g~±5g	60pcs/min	≤350mm	≤500mm	2146mm*1110mm*1280mm
NG-709-500	0.4KW	≤40kg	±5g~±20g	30pcs/min	≤440mm	≤800mm	1727mm*935mm*1270mm
NG-709-600	0.4KW	≤40kg	±5g~±20g	30pcs/min	≤530mm	≤650mm	2212mm*1045mm*1270mm

1.2 Pre-installation inspection:

① When you have a new dynamic weigh-in-motion machine, it is recommended that you check the equipment according to the following steps.

Check whether there is damage caused by transportation. If serious damage is found in the wooden packing box, contact the manufacturer to replace the equipment immediately.

② Check the whole machine. If you find that the equipment is damaged, the equipment does not work properly, or fails to pass the performance test, please contact our after-sales service department.

③ If the equipment is damaged due to transportation, please keep the packaging and notify the transportation department and our after-sales service department. The after-sales service department will arrange maintenance or replacement.



1.3 Installation environment:

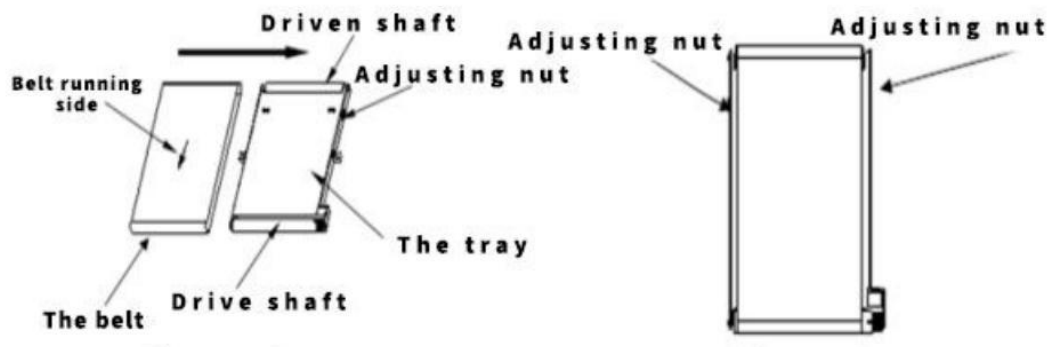
- ① The power supply voltage fluctuates not more than $\pm 10\%$;
- ② No place with high power and high frequency switches;
- ③ Places without volatile flammable and corrosive gases;
- ④ No place with ground vibration;

1.4 Precautions:

- ① To prevent sensor damage during transportation, the factory separates the weighing conveyor belt from the load cell. When installing the conveyor belt, handle it gently to avoid damaging the sensor. The power supply should be strictly separated from other noise-generating equipment (such as variable frequency drives and frequently started/stop power devices).
- ② When this equipment is connected with other equipment (front and rear conveyor belts, etc.), wiring and power distribution should be strictly in accordance with CE\UL electrical specifications; and this equipment should be grounded separately.

1.5 Installation of conveyor belt:

- ① Rotate the adjusting nut to adjust the distance between the driven shaft and the driving shaft to the minimum;
- ② Check the running direction of the belt, and put the belt into the tray according to the direction of the thick arrow (Figure 1);
- ③ Adjust the adjustment nut on both sides of the tray to make the belt tension moderate. And make the belt placed in the center of the tray (as shown in Figure 2).



1.6 Adjustment of conveyor belt:

- ① Adjust the belt tension to the appropriate degree, put it on the machine and run it, and observe the belt running condition;
- ② If the belt is in the middle of the tray, it is a normal state and no adjustment is needed;
- ③ If the peel belt is shifted to the left, the following adjustments can be made:

The left adjustment nut can be "tightened", which requires gradual adjustment. Adjust and observe until the belt returns to the center position. If the adjustment nut is found to be very tight, do not force the adjustment.

The right adjusting nut can be adjusted gradually. Adjust and observe until the belt returns to the center position.

(If the deviation is relatively large and it is difficult to return to the center position through gradual adjustment, you can quickly loosen the right belt first.

(If the belt has friction with the side baffle, stop immediately for inspection.

After installing the belt, it will naturally stretch to a certain extent. When rotating the belt 1-2



full turns under tension, ensure uniform and precise fixation of the tension pulley around its circumference. After 40 hours of operation, when readjusting and securing the pulley again, the intermediate layer of the belt's skeleton material will have fully stretched uniformly, preventing further extension.

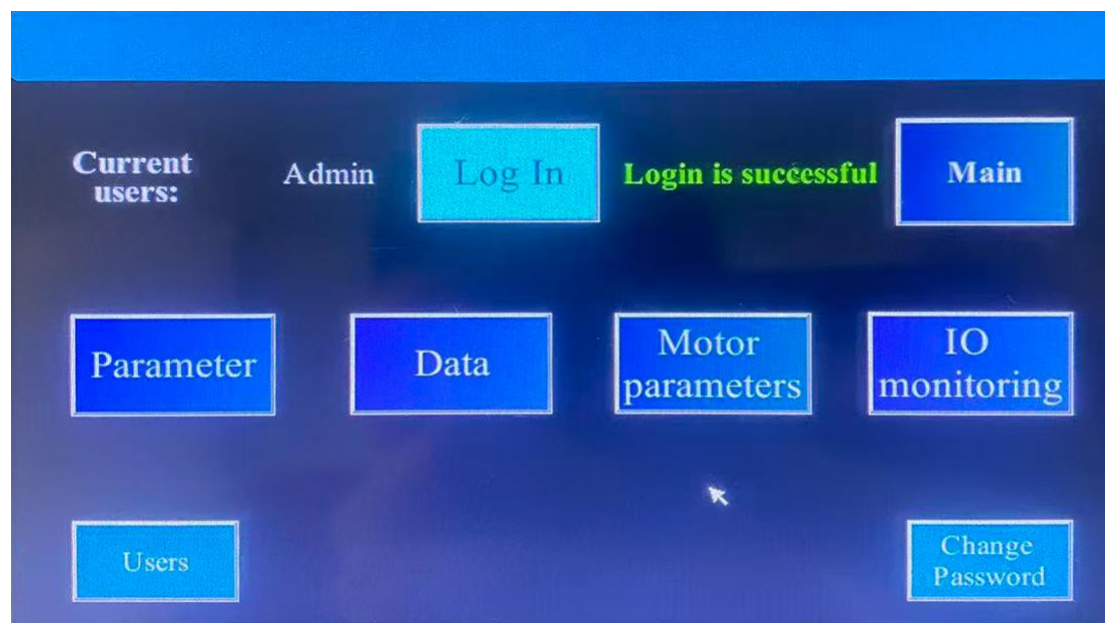
Chapter II User Guide

The system provides users with a simple and intuitive control panel for basic operations. The dynamic weigher's operation is controlled through a combination of power switch, motor switch, and industrial touchscreen. The power switch manages the equipment's electricity supply, while other functions are controlled via the industrial touchscreen, which allows access to various menu interfaces or direct access to specific applications. After mastering this chapter's content, users can perform fundamental operations on the equipment.

Touch screen main interface:

After the power on, the language selection dialog box is prompted on the screen. Customers can select the required language as needed. By default, it enters in Chinese

After entering the system, the main interface menu is shown in the figure.





Product overview

RCM328 control module is an industrial dynamic weighing control module, which can realize high speed, dynamic and high precision real-time weighing, and output the weighing results through Ethernet or serial mode.

This module is specially used for belt static and dynamic sorting and weighing, and adopts a special digital filtering algorithm inside, which can effectively suppress the interference of motor rotation, belt rotation and object impact.

The module supports two Ethernet interfaces and can be cascaded in a daisy chain. The Ethernet supports standard MODBUS TCP/IP

The protocol and standard MODBUS RTU Over TCP/IP protocol also support HTTP protocol to read the setting parameters.

The module serial bus adopts the standard Modbus RTU protocol and half-duplex RS-485 serial port transmission, and can set interface parameters, sampling and filtering parameters, weighing platform setting parameters, measurement value calibration parameters, skin and zero point parameters, status detection parameters, etc.

Demonstration of the type :

model	Digital output (high speed)	Digital input	Grading number	internet access
RCM328-RS01	Y1~Y4 (--)	X1~X2	3	×
RCM328-EN01	Y1~Y4 (--)	X1~X2	3	√

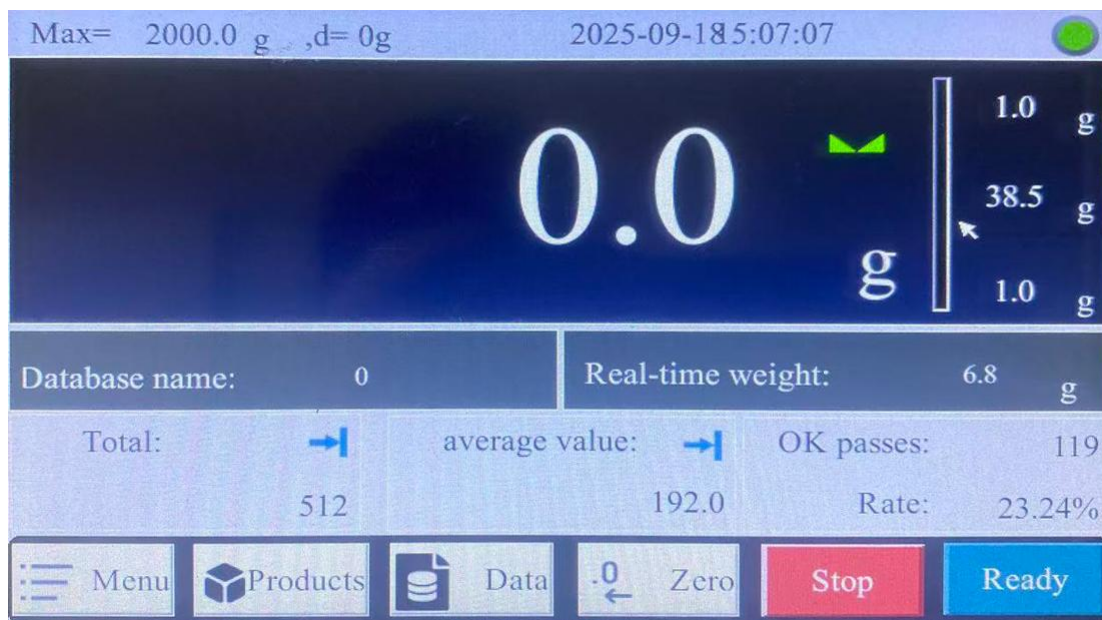


Key indicators

Accuracy/Speed	accuracy	Dynamic 1/5000; static 1/50000
	velocity	200 Packs/min
Show	display screen	7 inch touchscreen
	display resolution	800×480
A/D change	AD sample mode :	Sigma-Delta approach
	Maximum output rate	200SPS
	input range	-30mV~30mV
	nolinear	≤0.002%FS
	temperature coefficient	≤5ppm/°C
Sensor	driving voltage	5V, maximum current of 150mA
	Number of connected sensors	Up to 2350 ohm sensors can be connected
	attended mode	Four-or six-wire system
Weighing function	Display of the scale value	0.1、0.2、0.5、1、2、5、10、20
	Automatic zero tracking	0.1d/0.1s~20.0d/5.0s
	Manual reset	Prohibited, +/-2% FS, +/-4% FS, +/-10% FS, +/-50%FS
	Turn on automatic zero	Prohibited, +/-2% FS, +/-5% FS, +/-10% FS, +/-20%FS
	Multi-stage weighing	Level 3 (underweight, moderate weight, overweight)
	digital filtering	Specialized digital filters
	Data export	Supports export of weighing data to USB drive
Hull	way to install	Rack type, IP65 protection class
	size	180×108×77 (length × width × height, mm)
Class C fires	Power supply	24VDC 0.3A
	Use ambient temperature	-20°C~70°C
	Use relative humidity	10% ~ 90%, no condensation
Switching value	Number of ports	12 MOS outputs
	MOS tube output current	Maximum 1.5A
	Number of ports	Two, opto-isolation, common ground or common source mode
	Input port voltage	18~36VDC
MODBUS-RTU communication	Communication baud rate	1.2K,2.4K,4.8K,9.6K,19.2K,38.4K,115.2K
	physical layer interface	RS-485



Running the main interface



System Settings

System setup requires login permission. Different permissions will present different Settings.

The default login information is as follows:

User name: Equipment manager

Password: 0 (default password)

User name: System Administrator

Password: 123 (default password)



Recipe setup

The system supports up to 100 recipes, can switch recipes, change recipe names and units of quantity, and can set the corresponding speed and precision for different recipes.

Name: Support for Chinese pinyin input. It is recommended that the input be less than 16 characters.

Reweighing threshold: When the weight is greater than this threshold, the system performs reweighing.

Target weight: the actual weight of the object being weighed.

Upper deviation: the target value of the qualified range of the weight of the object to be weighed + upper deviation, that is, the upper limit of weight.

Lower deviation: the target value of the qualified range of the weight of the weighed object-the lower deviation, that is, the lower limit of the weight.

Sampling delay time: the corresponding delay time of a certain sorting action. Usually, after changing the speed of the weighing platform motor, the corresponding delay time should also be changed.

Overweight delay removal time:

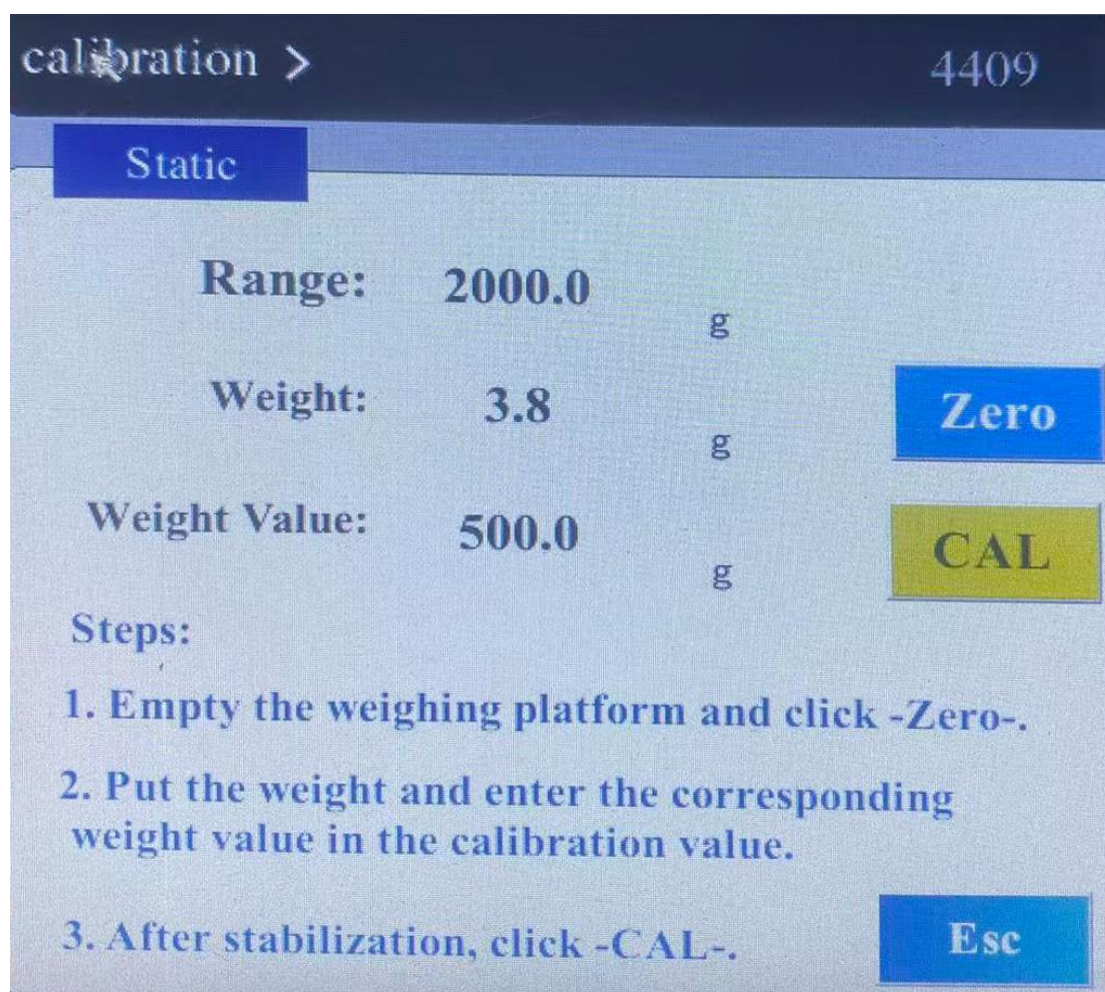
Overweight delay time:



Time of delayed removal of deficiency:

Delay time of underweight:

Claiming the logo is calibrated



Maximum scale: the maximum weight of the weighing platform

Real-time value: put the weight on the scale for calibration.

Weight value: Fill in the weight value of the corresponding weight.

Calibration process description:(1) input the weight value first (2) clear the items on the platform and click empty calibration (3) put the corresponding weight value on the platform (4) click load calibration, and then remove the weight, complete the calibration.



Weighing-appliance

Zero tracking range: The range of the scale value that the zero value can be tracked, which is 0 by default. When 0 is not tracked, the range is 0-9d.

Zero-point tracking time: When 0.5 is set again, the drift can be achieved within 0.5s to achieve tracking. The default value is 0.5, and the range is 0-3s.

Unit selection: You can choose the weight unit, support g and kg.

Detection mode: it is determined according to the photoelectric access mode of the device, and threshold time mode and photoelectric access mode can be set.

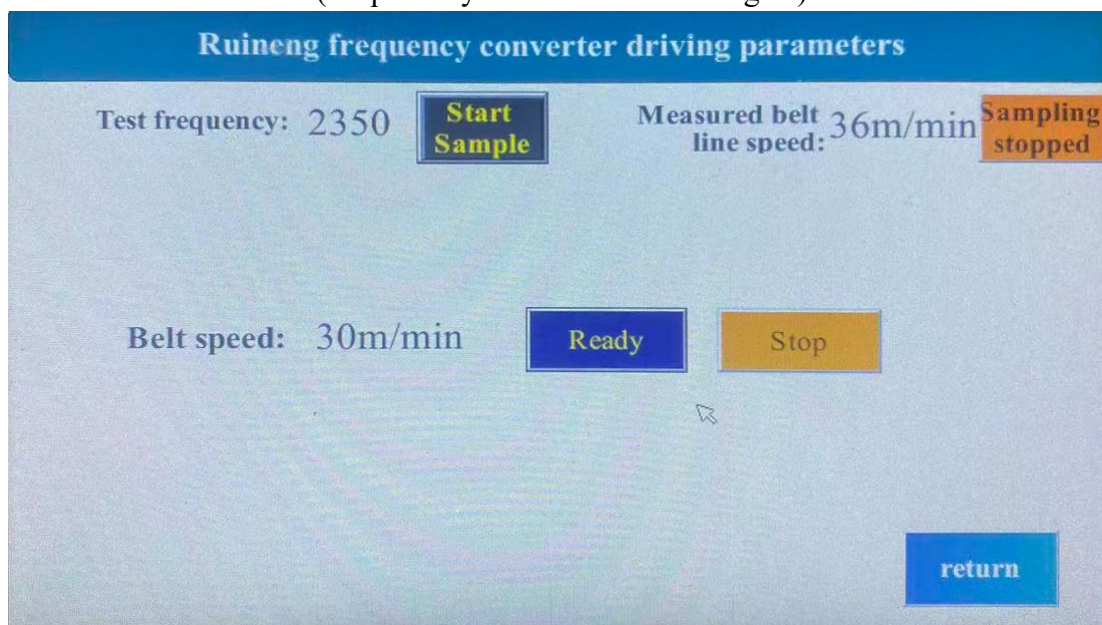
Scale value: The weight value used to smooth the display and can achieve the function of stable weight display. The optional range is 1,2,5, and the default value is 1.

Decimal point: You can set the number of decimal places to display the weight. You can set it to no decimal, 1 decimal place, 2 decimal places, or 3 decimal places, or 4 decimal places.

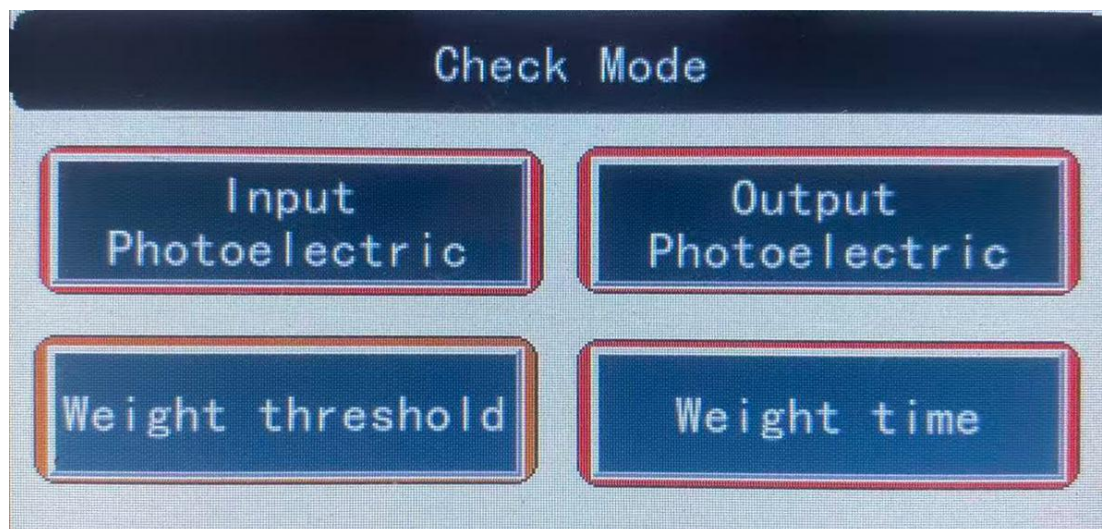


Speed correction

(Requires system administrator rights)



Motor Settings



Preference pattern

Entrance photoelectric: The photoelectric is located at the entrance of the scale platform, and the photoelectric trigger starts to weigh.

Export photoelectric: Photoelectric is located at the exit, and the weight is output only after the product completely leaves the scale platform.

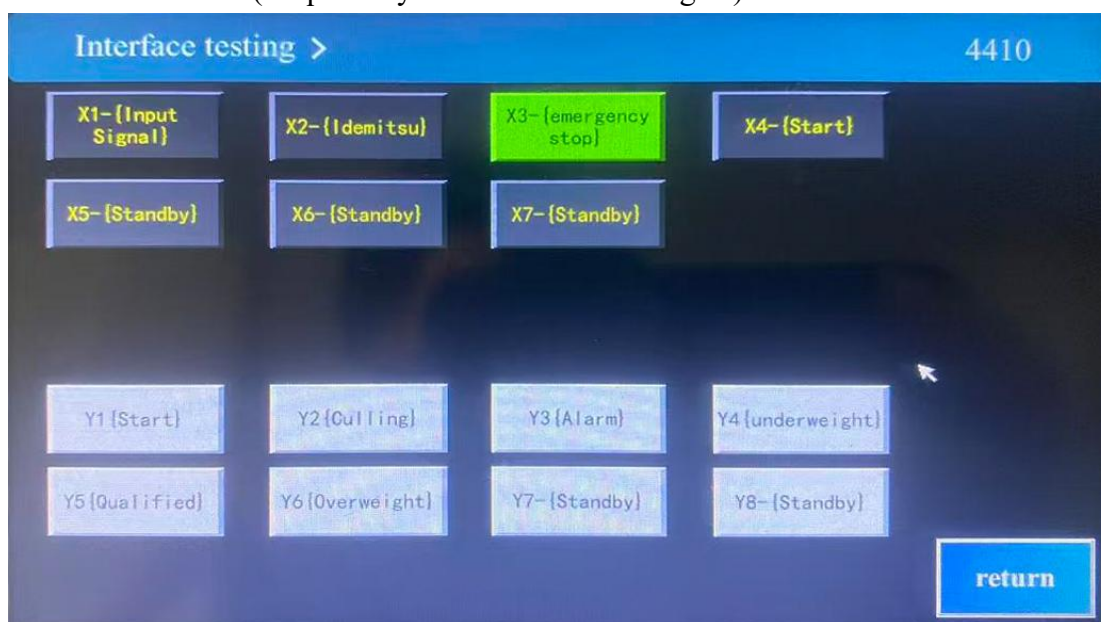


Weight threshold: When the product weight exceeds the set weight threshold, the system starts to weigh.

Weight time:

IO set up

(Requires system administrator rights)



IO Settings: You can debug by clicking the corresponding IO port number. When lit, the IO port is connected.

Y1-Y8 function: You can set the output function corresponding to each IO port. The output port can be set as: start running, cumulative alarm, overload action, qualified action, underweight action, abnormal elimination.

X1-X7 function: You can set the input function corresponding to each IO port. The input port can be set as start button, incoming photoelectric, outgoing photoelectric and emergency stop input.



History

numbering	Time	Product Name	Target	Data
1	2025-09-17 16:10:03	0	38	
2	2025-09-17 16:09:51	0	38	
3	2025-09-17 16:09:43	0	38	
4	2025-09-17 16:09:16	0	38	
5	2025-09-17 16:08:45	0	38	
6	2025-09-17 16:08:26	0	38	
7	2025-09-17 16:07:40	0	38	
8	2025-09-17 16:07:31	0	38	
9	2025-09-17 16:06:36	0	38	
10	2025-09-17 15:58:57	0	38	
11	2025-09-17 15:58:47	0	38	

Start Time: 2025-09-18 15:06:05 Finish Time: 2025-09-18 15:09:27

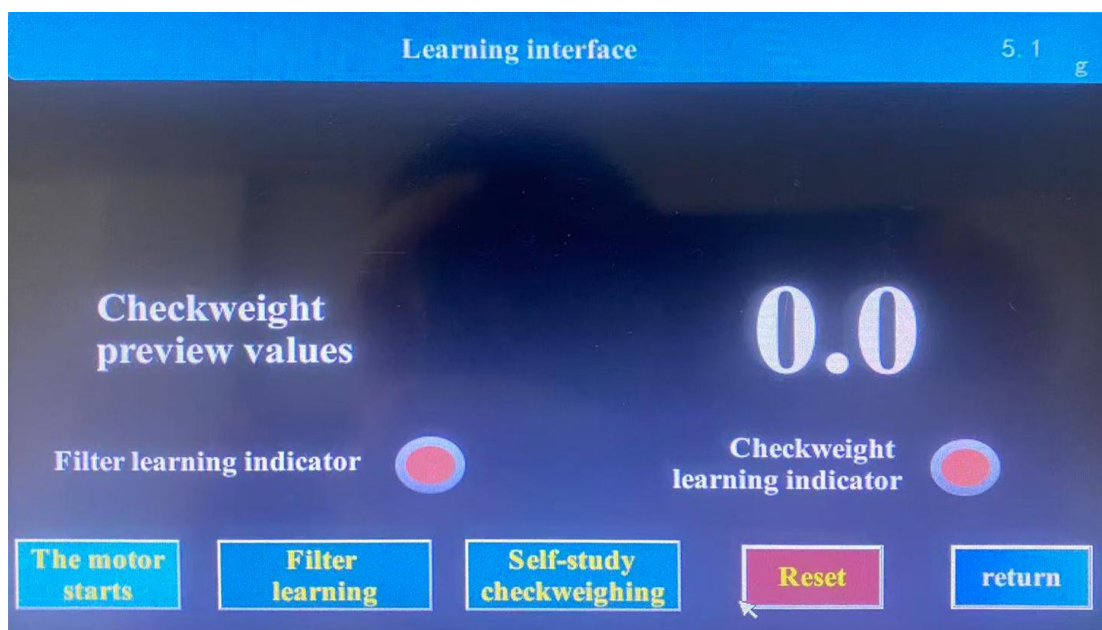
Buttons: U Disk, Delete, Main

History: All duplicate data will be viewed

Delete data: All saved data will be cleared.

Data export: Export the data of the current selected date to a U disk.

Compensatory Learning Page





Pulse belt length: input scale platform length (unit mm)

Motor speed: the required belt speed of the input

Product length: input the length of the product to be inspected (unit mm)

After the above two or three parameters are set, click parameter setting.

After the above four steps are completed, click the motor start, wait 10 seconds to reach the desired belt speed.

After the above five steps are completed, click filter adaptive. Wait a few seconds, then the adaptive learning completion window will automatically pop up.

After the above six steps are completed, click the adaptive weight check, put the weight check product on the platform and run it manually several times. If the weight check learning is successful, the learning will be automatically completed.

Reset: If there is a problem with the above parameters, you can click reset and re-enter.

Return: Return to the home screen

Chapter III Wiring instructions

(1) Description of power supply and communication terminals:

Terminator markings	function declaration
24V	Instrument power supply positive, DC 24V
GND	Instrumentation power supply negative electrode
SH	Instrumentation shielded end
GND	RS232 communication ground wire
A	RS485 communication positive, A end
B	RS485 communication negative electrode, B end



The rated power supply voltage of the instrument is 24VDC and the rated current is 250mA.

The instrument shielding terminal (SH) can be connected to the external shielding wire or to the negative power supply of the instrument (GND). The NH terminal is shorted to GND through a 0R resistor by default at factory, so there is no need to connect an external shield. If an external shield is connected, this resistor should be removed.

The RS485 communication protocol drives the inverter to control motor speed. The communication parameters are set at 9600 baud rate with parity checking, using the standard MODBUS protocol. The inverter addresses are configured as: 1 for the feeding system, 2 for the weighing platform, and 3 for the sorting system. Detailed specifications can be found in the motor configuration interface.

(2) Sensor terminal description:

Terminator markings	function declaration
E1+	Excitation positive of sensor 1
S1+	Positive signal of sensor 1
S1-	The negative end of the signal from sensor 1
E1-	Excitation cathode of sensor 1
SH	Sensor shielded end

The excitation voltage of the sensor is 5VDC. The instrument uses the signal terminal of sensor 1 and sensor 2.

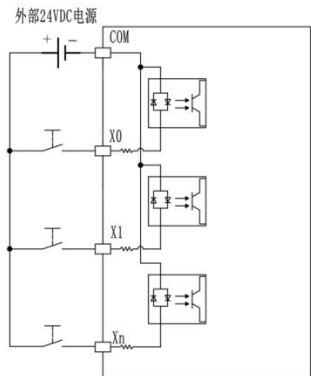
(3) Switching input terminal description:

Terminator markings	function declaration
COM1	Switching input public port 1
X1-X2	Switching input 0-2

Switching input ports: 2, the function of each input port can be set in the IO setting interface.

Input public port: can be COM+ (COM connected to the power supply), or COM- (COM connected to the power supply), X1 uses COM1 terminal, X2 uses COM2 terminal.

Input current range: 5mA~20mA.



(Internal schematic diagram)

(4) Ethernet port description:

Ethernet port:

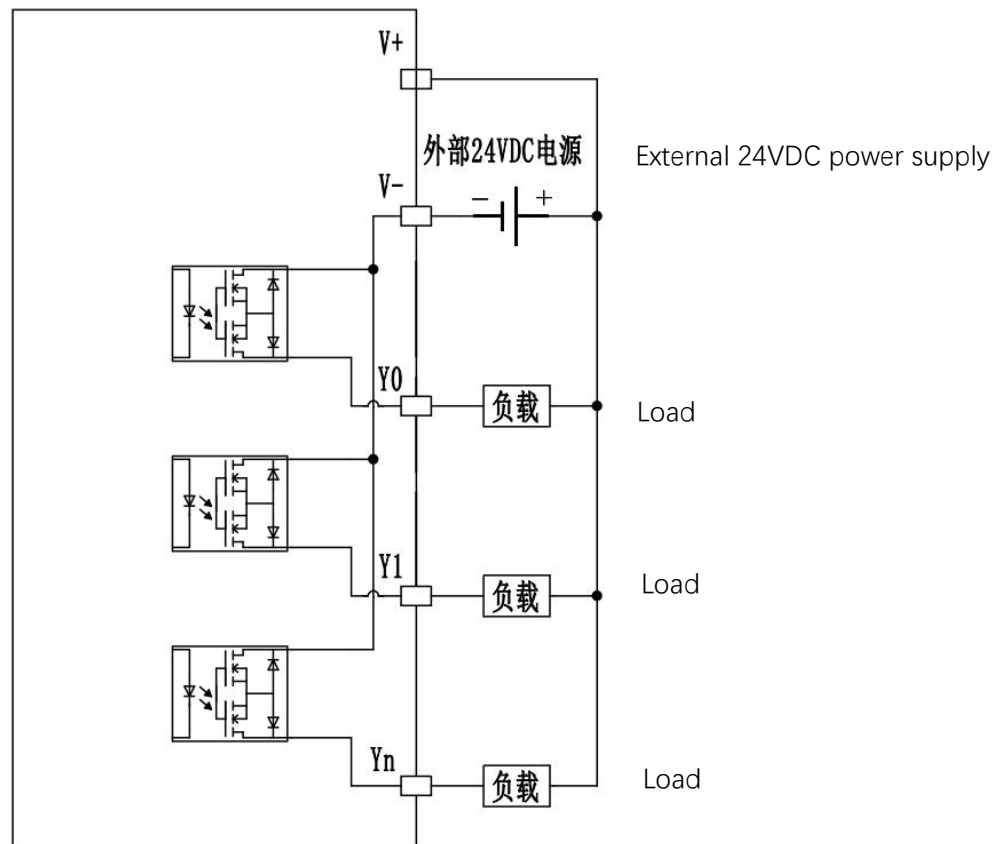
quantity	way
2	The chrysanthemum chain mode can be cascaded or redundant communication

(5) Switching output terminal description:

Terminator markings	function declaration
Y1-Y4	Switching output 1-4
YV+	Switching output positive external power supply, 24VDC
YV-	Switch the output negative terminal of the external power supply

There are 4 switch input ports, and the functions of each input port can be set in the IO setting interface.

Output port drive capability: 3A.



(Internal schematic diagram)



Quality Assurance

I 、 The guarantee period is twelve months (consumer goods and travel cost are not included).

II 、 The main quality warranty maintenance certificate

1. Please keep this guarantee letter, if you lost it, please connect with us in a month.
2. If this guarantee letter has been altered or it has no our stamp, it is useless.

III、 The following conditions need to pay reasonably even in the assurance period.

1. Natural reasons
2. Operating mistakes
3. Voltage is not fit for our operation instruction
4. Repack it without our guides
5. Damaged for borrowing to others
6. Damaged for authorized machine modification
7. Damaged for authorized calibration
8. Authorized transshipment mistake
9. Serve for long distance area

IV、 Notes:

1. Where the original in Guangdong province installation of our products, if the product moved to outside Guangdong-area use, whether or not within the effective warranty period, the transportation and travel expenses of the service personnel should be paid by the client.
2. All customers outside of Guangdong province, whether or not in the warranty period, the service of transportation and travel expenses paid by the customer.