Checkweigher

User's Manual

Contents

1 About this manual

Read the user manual before connecting and switching on the device. You will find information on how to get maximum performance from the device as well as how to avoid possible hazards.

This manual explains how to operate and set the device.

1.1 Safe-keeping

This manual is an integral part of the device and must be kept next to it, easily accessible for all personnel.

If the device is resold, the complete user manual must be provided with it.

1.2 Target group

The device must be operated by trained personnel. This means that the operator must be familiar with the content of this manual. Installation, servicing and repairs must be performed by qualified personnel.

1.3 Symbols used

The following symbols are found in this manual:

$\Rightarrow$ Text with arrow prompts you to carry out an action.

$\bigcirc$,1 Position number in figure.

[**Start belt**]	Text in bold within [] describes a physical button.
<**OK**>	Text in bold within < > describes a key in operation interface.
"**Display**"	Text in bold within " " indicates the display text.

☞	Rules must be followed.

Prerequisites have a gray background.

1.4 Warning notices

DANGER ⚠	The signal word above the symbol indicates the risk level: Source of danger with high risk with imminent danger for human! The consequences are: - critical injuries - severe damage to health

CAUTION	Source of danger, improper use!
	Cause damage to property.

2 Introduction

2.1 Structure

The checkweigher is available in different structure, an example is shown in the figure.
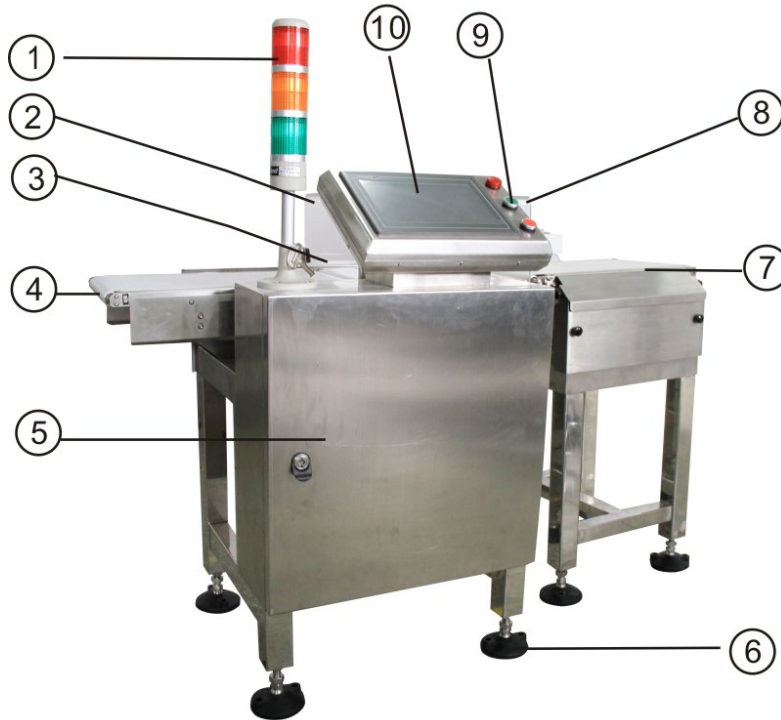
○,1 Alarm lamp

○,2 Wind shield

○,3 Weighing belt

○,4 Input belt

○,5 Electric control cabinet

○,6 Foot screws

○,7 Output belt

○,8 Rejector

○,9 [Start belt] (green) and [Stop belt] (red) button

○,10 Display and operating unit: 10 " touch screen

2.2 Specifications

The specifications of checkweigher list in Table 2-1.

Table 2-1 Specifications of checkweigher

	GM603B5
Max weighing range(g)	1200
Precision(g)	±0.5
Max throughput(pieces/min)	150
Interval(g)	0.1

Weighing belt width(mm)	230
Weighing belt hight(mm)	750±30
Power	180-260V(AC), 50-60Hz 350VA
Protection	IP54

*The precision depend on the items checked and the field condition, the precision here is the best precision the checkweigher can achieve.

2.3 **Intended use**

- The device can be used for checking the weight of packaged foodstuffs or goods.
- It can be used in industrial or commercial fields.
- The goods to be checked must be fed to the scales via transport belt.
- The packages need to be fed continuously to the device with regular intervals between the packages.
- The packages must be positioned on the centre of the belt when they are transported over the scales.

2.4 **Operating conditions**

Do not install or commission equipment until the operating conditions have been fulfilled:
- Temperature and air humidity:
    Temperature: -10~40℃
    Maximum humidity: 90% R.H without dew
- Vibration-free installation area
    Vibrations can affect measurements made by the scales. During production, avoid, for example, fork-lift truck activity near the device.
- Align horizontally
    To ensure the precision of the scales, it is of absolute necessity that the device is aligned horizontally.
- Draft
    Drafts can affect the measurements made by the scales. If required, use the hood over the weighing belt.
- Air convection
    Free air convection must be able to form around the unit in order to avoid inadmissible heating.
- Supply voltage
    Power supply: 180-260VAC, 50Hz±10%
- Electrical charge
    Packages may not be charged electrically when being transported to the transport belts.
- Trained personnel:
    Only trained personnel can maximize the performance of the device and avoid risks.
- Written permission for changes:
    Modifications to the devices require our prior written consent.

Please contact us or our competent customer service points if you have any doubts concerning the practical application of these conditions.

2.5 **Warranty**

We do not accept any liability for damages resulting from:
- Non-compliance with our operating conditions and user's manual.
- Unauthorized installation.
- Defective electrical installation by the customer.
- Structural changes to our equipment.
- Incorrect operation.
- Backup not executed.
- Natural wear and tear.

Guarantee is not given if defects/damage occur as a result of utilization by person we have not authorized.

Check that our products are handled correctly and repeat training if necessary.

3 Safety instructions

3.1 Trained Operator

The device must be operated by people who have been instructed in the operating procedure.

The operator must read and understand the safety instructions in this manual.

Even though the device is equipped with all the required safety installations, injuries to the operating personnel or damage to property is possible if the safety instructions are not heeded.

3.2 Protective and safety devices

3.2.1 Main switch

The main switch is on the side of the switch cabinet. Switch the device off at the main switch in the following situations:
- In the event of impending risk.
- When cleaning and maintenance work is being carried out on the outside of the control cabinet.

DANGER	Electrical voltage in the control cabinet even when the main switch is switched off! Risk to life from an electrical charge. Before carrying out work in the control cabinet, cut off power and disconnect the power connector. Work in the control cabinet must be carried out by qualified trained personnel.

3.3 Sources of risk related to the system

3.3.1 Components that start automatically

The device is designed for fully-automatic operations.

During fully-automatic operation, the transport belts and rejector, for example, can be switched on and off automatically.

⇨ Keep fingers, hands or long hair away from the moving parts of the device.

⇨ Switch off the device by using main switch before carrying out cleaning and maintenance work.

3.3.1.1 Conveyor belts

Do not place any objects on the transport belts and do not use the transport belts as a storage facility.

3.3.1.1 Rejector

Once the device is switched on, do not grab items in the rejector working area.
If necessary, install a protective hood over the rejector.
Pusher: Ensure that the height between pusher and belt is not more than 4 mm.
This setting makes sure that you cannot jam your fingers when the pusher pulls away.

3.3.2 **Rotating parts**

The belt drive contains rotating parts. To avoid body part, hair or clothing being caught and pulled into the machine, follow the instructions below:
Wear closely fitting clothes.
Do not wear necklaces, ties, or similar accessories.
Wear a hair net if you have long hair.

4 Installation

The initial installation and commissioning as well as instruction in the operation, cleaning, care and maintenance will be carried out by the responsible General Measure Service Agent or the General Measure specialist adviser.

5 Human machine interface

HMI with Touch Screen gives friendly access to information interaction between user and checkweigher. The most frequently used interface of this device is the main interface. Press key on main interface can enter sub interfaces. The sub interfaces share same structure. Here give introduction of the main interface and structure of sub interface.

5.1 Main interface

The main interface contains the following parts:

○,1 Authorization level

Indicates which level the current user belongs to. The device has four different authorization levels, which are

No log, in this situation, the user can only start checkweigher with the product parameter which have been selected before;

Operator, having the access to change product to be checked;

Technician, having the access to product management and basic maintenance;

Engineer, manufacture level, having full access to all parameters.

○,2 Stable sign

When current weight is stable, this sign comes up.

○,3 Zero sign

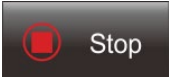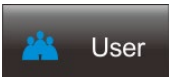When current weight is zero, this sign comes up.

○,4 Current weight

The weight output by the device.

○,5 Time information

Gives information of date and time.

○,6 Operation key

Setup	\<Setup\>	Entrance of product management and system maintenance.
Zero	\<Zero\>	Set current weight to zero.
Start	\<Start\>	Start the weight checking process.
Stop	\<Stop\>	Stop the weight checking process.
User	\<User\>	Link to change current user.
Data	\<Data\>	Link to weighing information.
Product	\<Product\>	Link to select product to be checked.
Clear	\<Clear\>	Used to clear alarm. All alarms related information is list in Table 9-1.

○,7 Basic statistical information of check result

"Over"　　Number of products checked as over.
"Pass"　　Number of products checked as pass.
"Under"　　Number of products checked as under.

○,8Basic information of current product

These information include：
"PD ID"　　Product identity.
"PD Name"　　Name of current product.
"Nominal weight"　　Nominal weight of the product.
"Upper deviation"　　Allowed value of actual weight over nominal weight.
"Lower deviation"　　Allowed value of actual weight under nominal weight.
"Throughput"　　Throughput of product.
"Checked"　　Numbers of product checked.

5.2 **Sub interface**

The sub-interfaces have same structure but with different function. The different function will be introduced later.
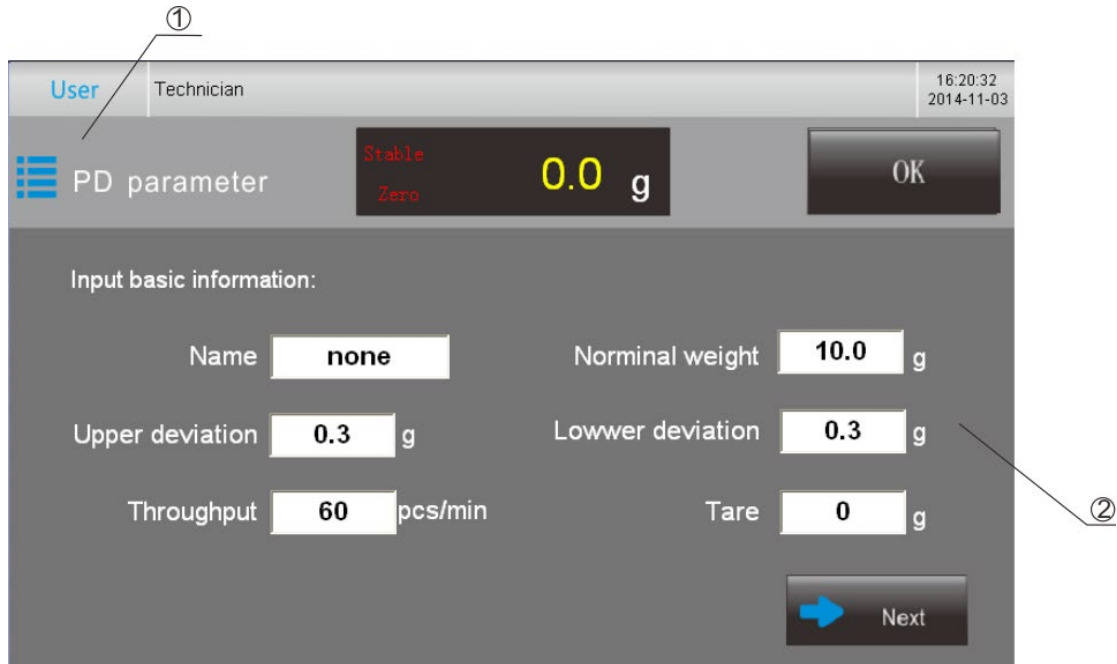
○,1 Name of sub-interface

○,2 Information and functional key area of sub-interface

In addition to the keys present in main interface, there are some other keys in sub interface:

	\<Next\>	Go to next page.
	\<Previous\>	Back to previous page

6 Instruction of operation

After correct installation, the device can be operated by touch screen, operation procedure as follows:
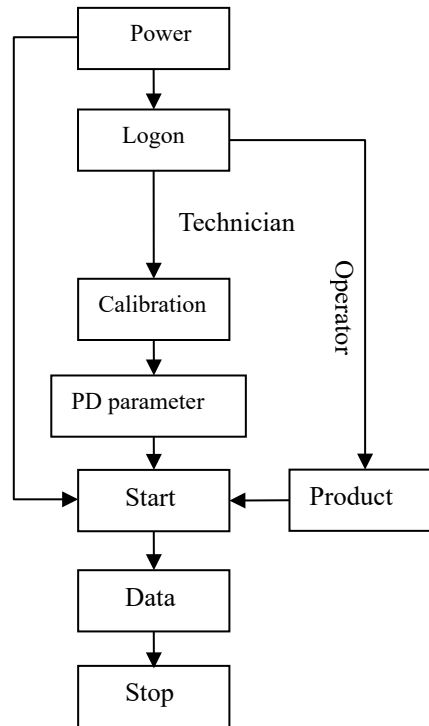
Fig 6-1 Operation procedure of Checkweigher

In above operation procedure flow chart, "Product parameter" should be added before any new product needed to be checked. "Calibration" should be carried out when the device is installed the first time.

6.1 Daily operation

6.1.1 Switch on device

Prerequisites:
- The device has been installed properly and all wires have been connected correctly.
- The operating conditions listed in 2.4 have been fulfilled.
- The operator has been trained and operation procedure must comply with the safety instructions listed in chapter 3.
- The weighing belt is empty.

Switch on the device at least 20 minutes before start weight checking.
The pre-run aims to ensure the system reach the correct operating temperature. Ignore the pre-run may cause negative effect on the precision of the weighing result.

$\Longrightarrow$ Turn the main switch in a clockwise direction.

        The main interface appears after a few seconds.

        The default user level is no log.

$\Longrightarrow$ Wait 20 minutes before weight checking.

        Aims to ensure system reach the correct operating temperature.

$\Longrightarrow$ Press <**Start** >.

6.1.2 **Switch off device**

Frequent breaks where the device is switched off can affect the precision of the weighing result. Leave the device switched on during short breaks in production. Do not switch off the device until production is over.

$\Longrightarrow$ Press <**Stop** >.

$\Longrightarrow$ Turn the main switch in an anti-clockwise direction.

6.1.3 **Start and stop weight checking**

Prerequisites:
- Product to be checked has been selected.
- Product parameter has been set correctly.
- Calibration has been carried out.
- The device has been switched on for at least 20 minutes.

$\Longrightarrow$ Start weight checking: Press <**Start**>.

        Start weight checking process.

$\Longrightarrow$ Stop weight checking: Press <**Stop**>.

        Stop weight checking process.

6.1.4 **Enter/modify data**

    A numerical keyboard which can be operated as a normal PC keyboard will pop up when data input box is triggered.

Prerequisite:
- A data input box   exists and it can be triggered to input data

$\Longrightarrow$ Click the input box.

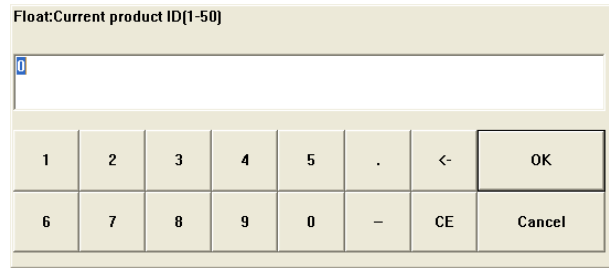   A numerical keyboard with data description (on the left top) appears, as Fig 6-2.

Fig 6-2 Input box

Input data according to the data description.
The data description "Float: Product identity [1-50]" means the parameter is "Product identity" and its input range is 1 to 50.

Press <**OK**> to confirm entered data or press <**Cancel**> to cancel and exit

6.1.5 **Logon and logoff**

Checkweigher has four user levels, the default level is no log, which can only start the device to check one kind of product whose parameter has been set correctly and selected. If you need to check more than one kind of product, you need to logon with operator account. If product management or system maintenance need to be carried out, logon with technician account will be requested. Steps of logon are as follow:

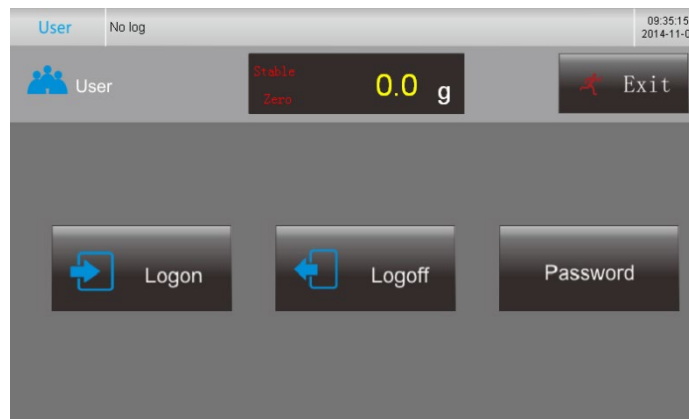Press <**User**> in main interface.
Enter user interface, as Fig 6-3.

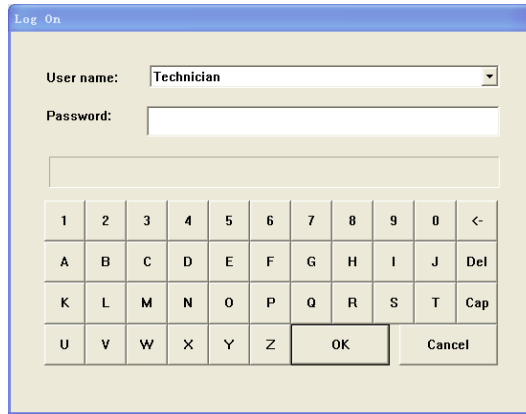Fig 6-3 User interface

Press <**Logon**> .
Pop up log on dialog box.

Fig 6-4 Log on dialog box

➡️ Select account. See Fig 6-4.

➡️ Input the password.
Initial password of operator and technician are 000000.

➡️ Press <**OK**>.
It comes to main interface with technician level authorization.

For the first time, please change the password yourself and keep it appropriately.

➡️ Press <**Password**> in user interface.
Change password interface pop up. See Fig 6-5.

Fig 6-5 Change password interface

After finished the operation which need to logon with specific user level, user should logoff in case that others change the configuration and bring economic loss.

➡️ Press <**Logoff**> in user interface.

6.1.6 **Product select**

For the operator level user, it has no right to change product parameter, this avoids incorrect parameter modification. The operator level user can only choose the product parameter pre-defined by technician level user.

⇨ Logon with operator account.

⇨ Press <**Product** > in main interface.
   Enter product select interface, as Fig 6-6.

PD ID	Name
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Select product to check

OK

Cancel

Fig 6-6 Product select interface

⇨ Select the product to be checked according to its name.

⇨ Press <**OK**>.
   Go back to main interface.

6.1.7 **Alarm clear**

The system will display alarm message if operation error occurs, the common alarm list in Table 9-1. To continue operation, you need to clear the alarm message.

⇨ Press <**Clear**> in main interface (The <**Clear**> button will pop up in weight display window when there is alarm message).

6.1.8 **Data inquiry**

The device has data storage and inquiry function.
⇨ Press <**Data**> in main interface.
   Enter data inquiry interface, as Fig 6-7.
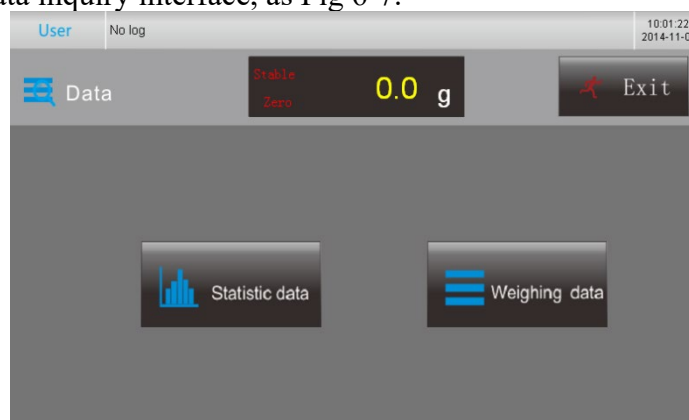
Fig 6-7 Data inquiry interface

⇨ Press <**Statistic data**>
   Statistic information of batch can be inquired in 'statistic data interface', as
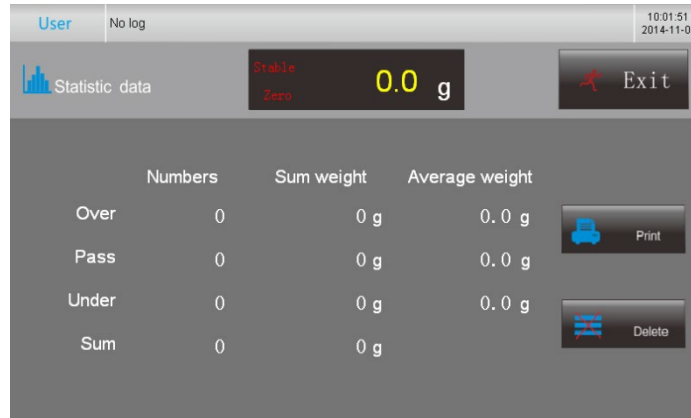
Fig 6-8.

Fig 6-8 Statistic data interface

This information of each product is recorded separately and it will be reset if related product parameter is modified. If starting a new batch checking procedure without changing product parameter, user needs to clear previous statistic information of batch manually in 'statistic data interface'; otherwise the new batch statistic information will be added to previous information.

⇨ Press <**Print**>

When the RS232/RS485 selectable port is set to Print1 or Print2 and the printer connect correctly, the statistic data will be printed.

⇨ Press <**Delete**>

The batch information will be reset.

Besides the statistic information, the device records every check result. The weighing result can be viewed conveniently in weighing data interface.

⇨ Press <**Weighing data**> in data inquiry interface.

Enter weighing data interface, as Fig 6-9. All the checking results are recorded here. <**Home**>, <**PageUp**>, <**PageDown**> and <**End**> are used for viewing data.
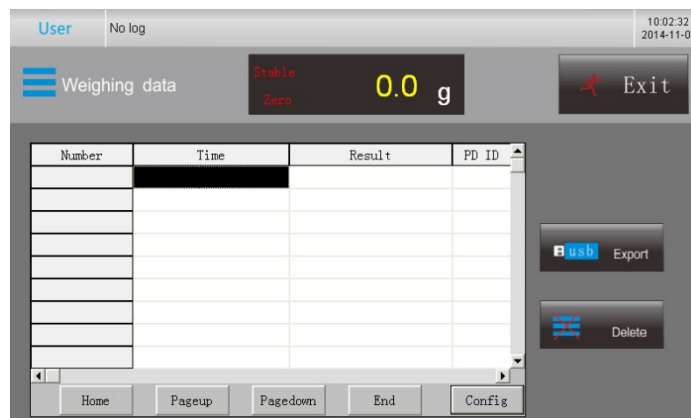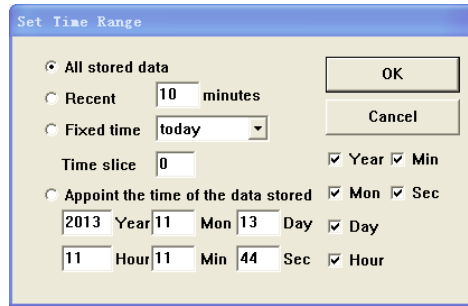

Fig 6-9 Weighing data interface

Fig 6-10 Configuration window

⇨ Press <**config**>.

        Configuration window appear, you can choose special time range to show check result.

The data can be exported through usb port.

⇨ Insert flash disk.

⇨ Press <**Export**>.

        Export weighing data to flash disk. The data can be viewed and manipulated in computer through Excel.

The weighing data information can be deleted

Prerequisites:
- The device has been Logon with technician account.

⇨ Press <**Delete**>.

        Delete all the weighing data.

6.2 **Setup**

6.2.1 **Product management**

Prerequisite:
-    Logon with the technician account.

⇨ Press <**Setup**> in main interface.

        Enter setup interface, as shown in Fig 6-11. In this interface, the load cell voltage is used to check whether the load cell is in good condition. If the voltage don't change with the load on the weighing platform or the voltage varies in wide range (over 0.002) in static state (no obvious vibration or wind), the load cell may be damaged (make sure there is no limit on the weighing platform).

Fig 6-11 setup interface

CAUTION	Weight checking process should be stopped when entering setup interface.

⇨ Press <**PD magage**>.

Enter PD manage interface, as Fig 6-12.
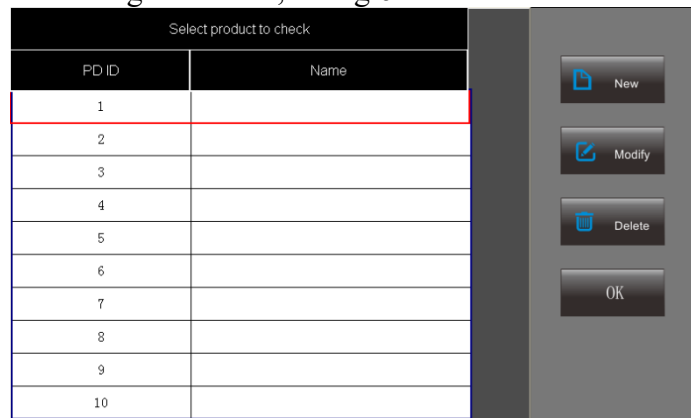

Fig 6-12 PD manage interface

⇨ Press<**New**> in PD manage interface.

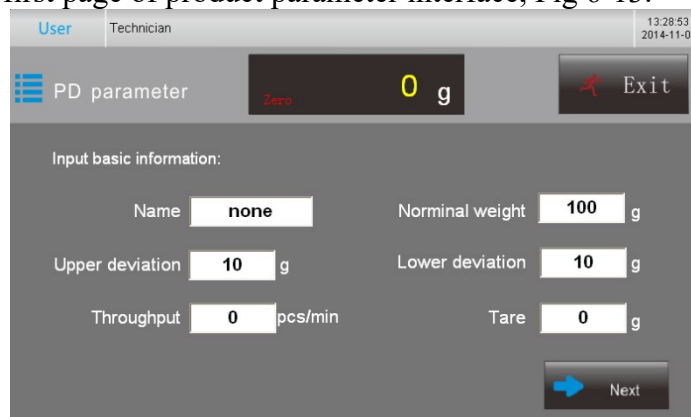Enter first page of product parameter interface, Fig 6-13.

Fig 6-13 Product parameter 1

⇨ Set the parameters correctly

The following product parameters can be set:

"**Name**"

Product name.

"**Nominal weight**"
Weight of the product expected to be.

"**Upper deviation**"
When the weighing result > nominal weight + upper deviation, the checking result is over.

"**Lower deviation**"
When the weighing result < nominal weight – lower deviation, the checking result is under.

"**Throughput**"
Quantity of product checked per minute.

"**Tare**"
Weight of the product package material, display result = weighing result – tare.

⟹ Press <**Next**>
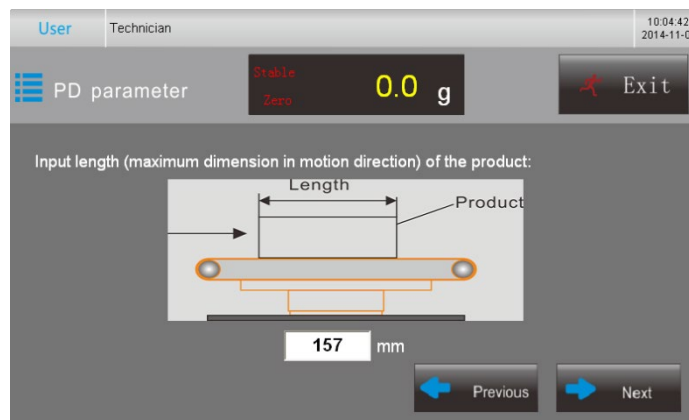Enter second page of product parameter, as Fig 6-14.

Fig 6-14 Product parameter 2

⟹ Input length of the product correctly.
Length is the maximum dimension in motion direction.

⟹ Press <**Next**>.
Enter third page of product parameter, in this page, you can input the parameters which are used to control the rejector.
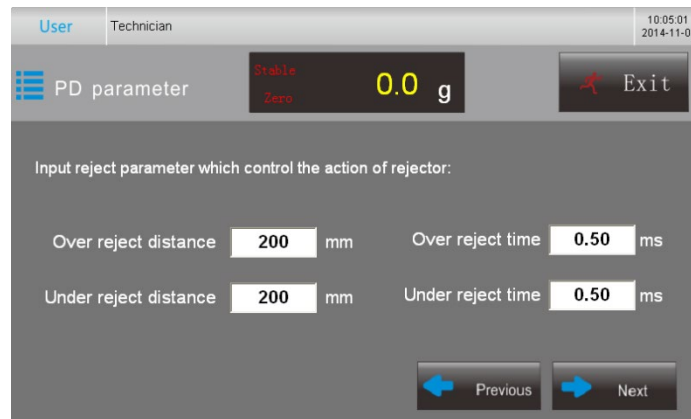
Fig 6-15 Rejector parameter interface

⇨ Set the parameters correctly.
    The following product parameters can be set:

"Over reject distance", **"Over reject time"**
    Over reject distance is the distance between the end of weighing platform and the centre of over rejector.
    Over reject time is the lasting time of over reject signal.

"Under reject distance", **"Under reject time"**
    Under reject distance is the distance between the end of weighing platform and the centre of under rejector.
    Under reject time is the lasting time of under reject signal.

    Because the belt moves fast and there is delay in reject signal transmission, in most time the reject distance is not exactly the practical measured value. It needs to be amended in practical application. Reject time should be suitable to guarantee that the fail item rejected as well as the next item not be blocked. Procedure of set these two parameters list as follow:
    (1) Enter rejector parameter interface and set an initial value of these two parameters, normally, the reject distance should be the measured value, the reject time be 0.5s.
    (2) Press <**Start**> in main interface.
    (3) Use fail item carrying out one test to see the actual reject situation.
    (4) Press <**Stop**>.
    (5) If the rejector takes action after the item has pass through it, it needs to decrease the reject distance. If the rejector takes action before the item arrive the rejector, it needs to increase the reject distance.
    (6) Repeat (2)-(5) until the item be rejected at the centre of rejector.
    (7) Put two consecutive fail items to see whether the rejector can reject the two items.
    (8) If the rejector can't reject the two items, decrease the reject time until it can satisfy the need.

⇨ Press <**Next**>
    Enter dynamic study interface, you can conduct dynamic study procedure according to the information.

Dynamic study is used to simulate actual product checking procedure. After a certain number of tests, the device determines physical characters of product to be checked and records them in system. These characters will be used in actual checking procedure. Therefore, for a new product, the dynamic study must be carried out after basic product parameter and length are set correctly.

CAUTION	Dynamic study should be conducted once a new kind of product need to be checked.
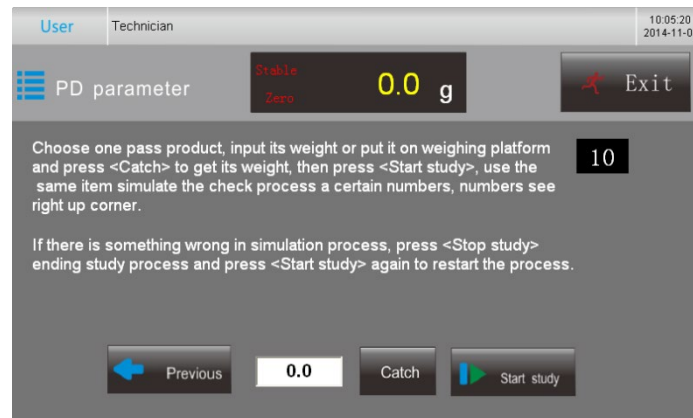
Fig 6-16 Dynamic study interface

Finished dynamic study procedure, it will come to result interface automatically. In this interface, you can confirm the accuracy of the checkweigher for this product, if the result is obvious wrong, conduct dynamic study procedure again.

Fig 6-17 Result interface

⇨ Press <OK> to save this PD parameter.

⇨ Press<New> to add new product or press <OK> to go back to main interface.

6.2.2 Basic maintenance

Prerequisite:
- Logon with the technician account.

⇨ Press <**Maintenance**> in setup interface.

Enter basic maintenance interface, as Fig 6-18.

Fig 6-18 Basic maintenance interface

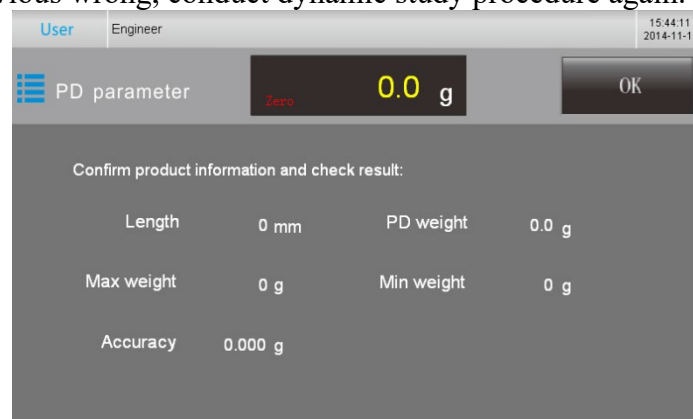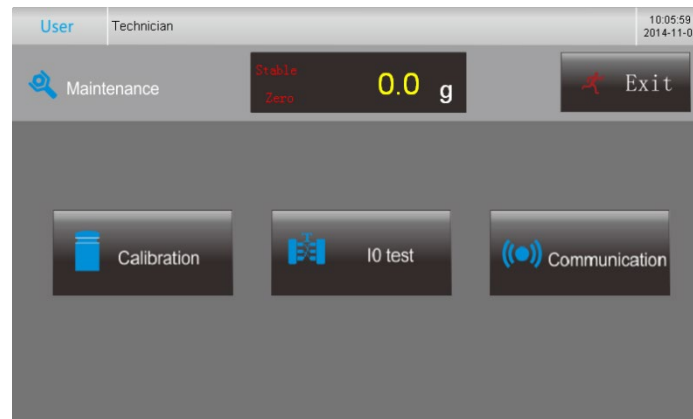## 6.2.2.1 Calibration

Prerequisite:
- The device has been switched on for at least 20 minutes.

Calibration is essential for weighing system. In order to guarantee the weight output by checkweigher is right, it must be conducted after the device installed first time.

Calibration establishes the relationship between loadcell output signal with the product mass on the platform. It is basic operation which guarantee checkweigher satisfy operating requirements.

⇨ Press <**Calibration**> in maintenance interface.

Enter calibration interface, as Fig 6-19. Conduct calibration operation according to the information in this interface.
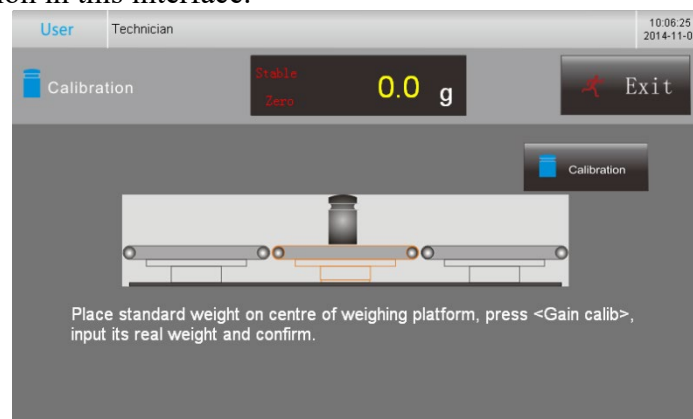

Fig 6-19 Calibration interface

6.2.2.2 IO test

⇨ Press <**IO test**> in maintenance interface.

Enter IO test interface, as Fig 6-20. This interface is used to check whether the input port and the output port can work well.

When the input signal is effective, a red light will appear behind the corresponding input port.

Activate the output port by press in the blank, the output port will output signal.
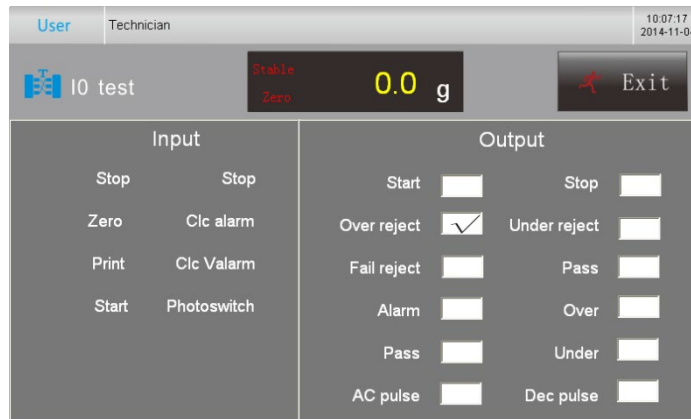
Fig 6-20 IO test

6.2.2.3 Communication

⇨ Press <**Communication**> in maintenance interface

Enter communication interface, as Fig 6-21.

Fig 6-21 Communication interface

The parameters in this interface are as follow:

"**Slave station**"

Identity of this device in communication system.

"**SP function**"

Function of the RS232/RS485 selectable serial port. There are 4 different function it can choose to be:

"BusRTU"   The device can communicate through Modbus RTU communication protocol.

"BusASCII"   The device can communicate through Modbus ASCII communication protocol.

"Result"   The device sends result after each test in the following form:

STX	State1	State 2	State 3	Mark	Limit	Sampling Result	Unit	CRC	CR	LF

Here:

STX: Start byte, 02H

State 1: 20H

State 2: 20H

State 3: 20H

Mark: 1 byte

When a new value sampled, this byte adds 1, this byte cycles from 31H to 39H. It is assistant for sampling values.

Limit : 1 byte.

This byte is "H" (48H) if checking result is judged as OVER, "G"(47H) if OK, and "L"(4CH) if UNDER.

Sampling Result: 7 bytes.

Includes decimal point (2EH), the high-order byte is " " (20H) if no decimal point , and the high-order byte is 2DH if sampling result is negative .

For instance, if result is 3.75, these 7 bytes are:

20H   20H   20H   33H   2EH   37H   35H

If result is -37.5, then these 7 bytes are:

2DH   20H   20H   33H   37H   2EH   35H

Unit: 2 bytes.

These 2 bytes are 74H 20H if unit is "t", 6BH 67H if "kg", and 67H20H if "g".

CRC: 2 bytes. Check sum.

Count the sum of all the left bytes and convert the sum to be decimal date, and then convert the 2 low-order digits of the decimal date to ASCII code.

CR: 0DH

LF: 0AH

For example, when the controller sends out a data sequence (in hex),

02 20 20 20 30 4C 20 20 20 20 35 33 36 6B 67 35 37 0D 0A

It indicates that the present weight is 536Kg.

"Print"   The device can connect with printer to support print function.

"Conprint"

When the sp function is set print and conprint is set open, every check result can print in form of check time plus check result.

"Baud rate"

Communication speed, with the unit of bits/s.

"Data bits"

You can choose 8 or 7.

"Parity"

You can choose none, even or odd.

"Data order"

You can choose H-L or L-H.

Besides these parameter, the stop bits is 1 and unchangeable.

6.2.3 **Advanced maintenance**

Prerequisite:
-    Logon with engineer account.

6.2.3.1 System parameter

⇨ Press <**Maintenance**> in setup interface.

Enter advanced maintenance interface, as Fig 6-22
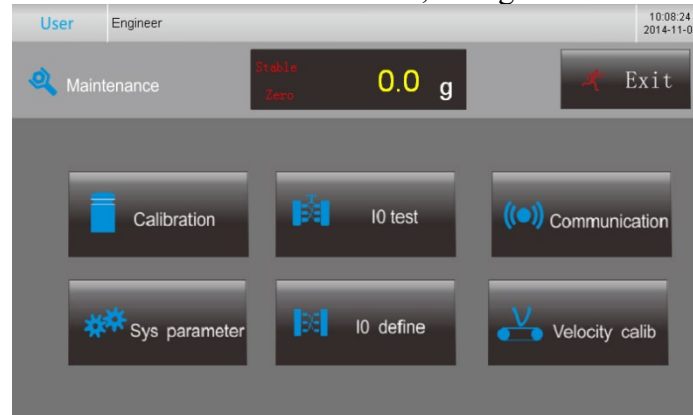
Fig 6-22 Advanced setup interface

⇨ Press <**Sys parameter**>.

Enter system parameter interface.

Fig 6-23 System parameter 1

⇨ Set the parameters correctly.

The following system parameters can be set.

"**WP length**"

Length of the weighing platform, it is the distance between two rollers.

"**Capacity**"

Maximum capacity of checkweigher.

"I**nterval**"

Minimum interval of checkweigher.

"**AZ level**"

Filtering level for automatic zero operation.

"**Unit**"

Unit of the system.

"Decimal places"

Decimal places of the system.

"OI DTM time"

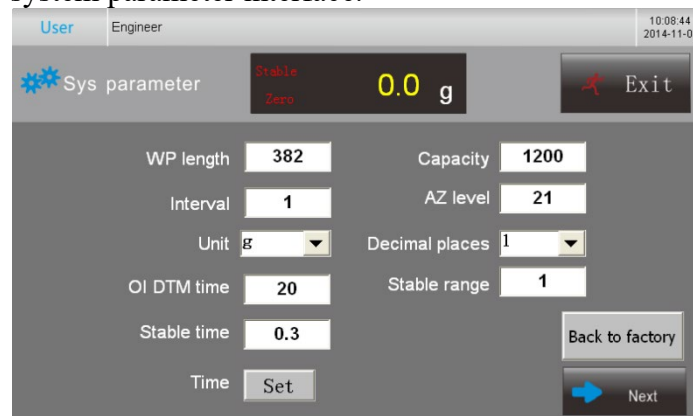Photoelectronic switch input determination time. When the photoelectric switch sense the item for time longer than this value, it takes that there is one item pass the photoelectric switch. Its unit is ms.

"Stable range", **"Stable time"**

When the system weight change in a small range in certain time，the system consider the weight is stable, the range is stable range and the time is stable time.

"Time"

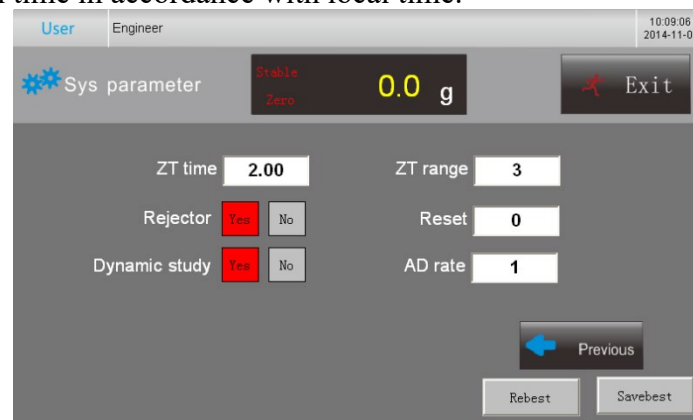Set system time in accordance with local time.

Fig 6-24 System parameter 2

"ZT range", **"ZT time"**

Zero-tracking range and zero-tracking time. When the system weight change in a small range in certain time，the system will zero automatically, the range is zero-tracking range, and the time is zero-tracking time.

"Rejector"

If the checkweigher need to use rejector, choose 'yes' and there will be rejector parameter (product parameter 3) in Product parameter. If it needn't to use rejector, choose 'no' and the rejector parameter will not appear in product parameter.

"Reset"

This is used to initialize all the parameter, please don't try to use this function unless under guidance.

"Rejector"

If it need to conduct dynamic study, choose 'yes' and there will be dynamic study interface (product parameter 4) in Product parameter. If it needn't to, choose 'no' and the rejector parameter will not appear in product parameter.

<Savebest> and **<Rebest>**

These two keys are used together. When you change the system parameters and

want to save these parameters as the default parameter for the checkweigher, you can use the <**savebest**> key. So in this situation, if there are something wrong and not easy to make sure whether there are incorrect parameter, press the <**Rebest**> key, the parameter will come back to the value you save last time. Another application is for the PD parameter, there are 50 product identities, when you want to change some product parameters for all the 50 product identities, you can change the parameter in current product identity and press <**Savebest**> and <**Rebest**> sequentially, the parameter will change in all the 50 product identities.

6.2.3.2 IO define

⟹Press <**IO define**> in advanced maintenance interface.
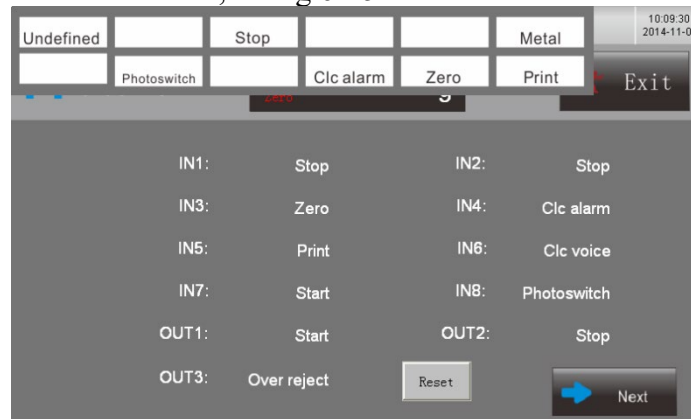　　　　Enter IO define interface, as Fig 6-25.

Fig 6-25 Input define interface

⟹Press on the field [IN1:　　Stop]
　　　　Input definition window pop up at the top left corner，as Fig 6-25.

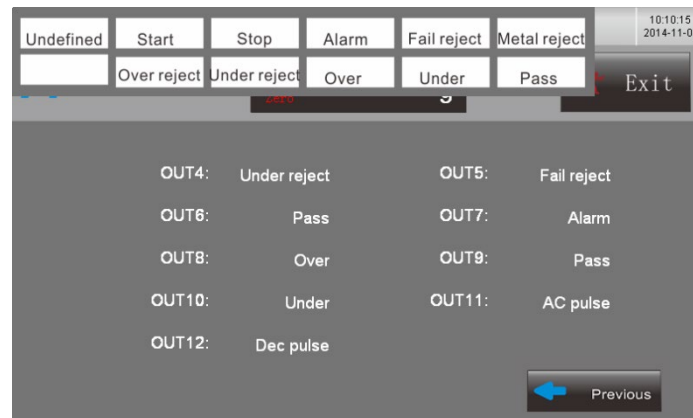⟹Choose the function of this input port.

Fig 6-26 Output definition

⟹Press on the field [OUT6:　　Pass]
　　　　Output definition window pop up at the top left corner, as Fig 6-26.

⟹Choose the function of this output port.

6.2.3.3 Velocity calibration

⇨Press <Velocity calib> in advanced maintenance interface.
Enter velocity calibration interface, as Fig 6-27.

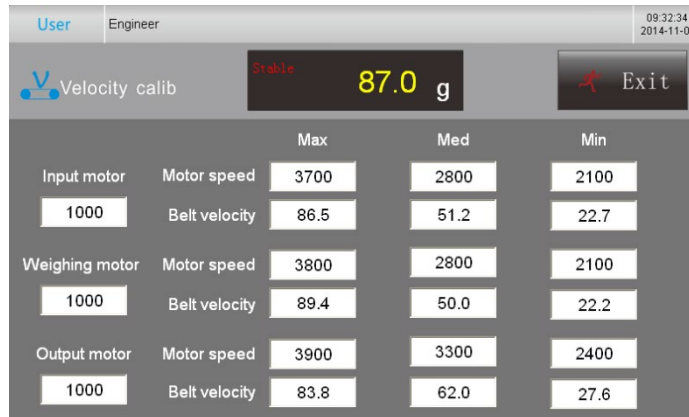Fig 6-27 Velocity calibration interface

⇨ According to the belt speed range, determine three point speed and line velocity, input the three speeds sequentially in the input box under input motor, measure the corresponding line velocity, and record the speed and line velocity in the right.
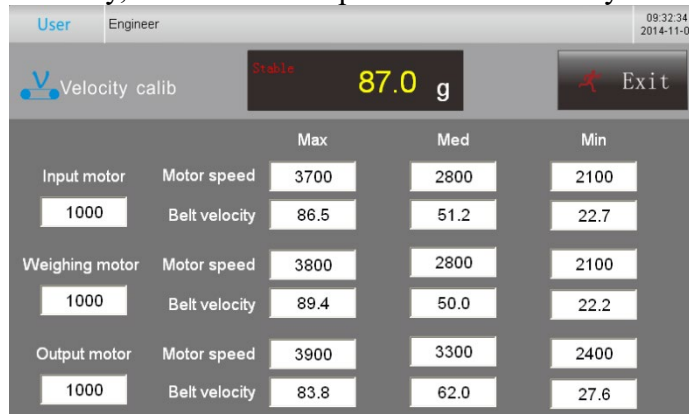

Fig 6-28 Input belt calibration interface

⇨Repeat the operation for the weighing belt and output belt.

7 Communication protocol and parameter

The device can communicate by RS232/RS485 selectable serial port and support Modbus communication protocol. Initial setting is RS232 serial port.
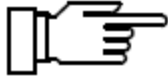
Communication protocol address as follows:

Function address	Description
4 bytes read-write	
0100	Current product identity
0108	Stable-determination range
0114	Product length
0116	Nominal weight
0118	Upper deviation
0120	Lower deviation
0126	Tare
0130	Weighing belt velocity
0134	Distance between end of weighing platform and centre of over rejector
0136	Distance between end of weighing platform and centre of under rejector
0138	Distance between end of weighing platform and centre of fail rejector
0142	Overweight reject time
0144	Underweight reject time
0146	Fail reject time
0150	Dynamic compensation coefficient
0158	Total batches
0160	Pass batches
0162	Consecutive reject batches
Read-only register（Function code 0x03）	
0600	Real-time weight
0602	Current weight (Weight displayed)
0604	Sampling label
0606	Sum weight
0608	Sum times
0610	Pass sum weight
0612	Pass sum times
0614	Pass average weight
0616	Percentage of pass
0622	Over reject sum weight
0624	Over reject sum times
0626	Under reject sum weight
0628	Under reject sum times
0678	Throughput, unit: p/min
0682	Error code
0684	Average weighing result of latest 50 times

0686	Standard deviation
......	reversed
Read-only bit（Function code 0x01，23 bits per time at most）	
0000	Stable-determination (Stable:1, Unstable: 0)
0001	Symbol (negative: 1, positive: 0)
0002	Overflow (overflow: 1, normal: 0)
0004	alarm (yes: 1, no: 0)
0006	Over (yes: 1, no: 0)
0007	Pass (yes: 1, no: 0)
0008	Under (yes: 1, no: 0)
......	reversed
Read-write bit（read function code 0x01，write function code 0x05）	
0015	Start
0016	Stop
0020	Zero
0021	Alarm clear
0022	Sum clear
0023	Print

8 Maintenance

8.1 Cleaning

Disconnect the power supply before cleaning the checkweigher.
When cleaning the checkweigher working site, the checkweigher must be covered.

The following are not permitted for cleaning:
- Sharp, hard, or pointed objects
- Water or steam jet devices
- Compressed air
- Cleaning agents that are hazardous to health or that contain solvents

Clean Belt and belt unit every day.

Clean touch screen, switch cabinet and light barrier once a week.

8.2 Maintenance

Check the wiring every month to secure that the wiring is reliable.

9 Troubleshooting

9.1 **Alarm**

If there is something wrong with the operation, the control system will send alarm message and display on touch screen. The common alarm messages, alarm reason and solutions list in table 9-1:

Table 9-1 Alarm message, reason and solution

Alarm message	Alarm reason	Solution
Over zero range	Current weight exceed 50% of the range of checkweigher	Alarm clear, current weight cannot be zeroed.
Overload	Current weight exceed range of checkweigher	Alarm clear, current weight cannot be weighed.
Too close	The distance between two products is too small that causes the checkweigher weigh two products at the same time	Alarm clear, the checkweigher can weigh one product per time, so the next product can only enter the weigh platform after the previous product leave the platform and the control system successfully back to zero. Readjust the distance between two products and check whether the length set in product parameter is right.
Unstable	When zero, the weight is not stable.	Alarm clear, confirm the reason caused the weight unstable, common reasons are disturbance of external air, disturbance of electromagnetic field, some object contact the platform and the foot screw not fix reliably. This solution apply when the stable sign do not appear normally.
Auto zero fail	After each test, the weighing system will carry out zero operation automatically, when this alarm occur, means that the zero operation fail.	Alarm clear, increase the BZSD range. Attention: This operation will affect the accuracy, so carry out this operation cautiously.
Reject error	The rejector receive new reject signal before finishing last reject action	Alarm clear, increase product distance.

9.2 **Others**

1. If there is loss of accuracy in using process, check as follows:
    (1) Make sure that the foot screws touch the floor reliably. If there are foot crews

not touch the floor, adjust the nut to make the foot screw touch floor reliably.

(1) Check whether the device is aligned horizontally.

(3) Check whether the motor wire is fixed, avoiding the wire hang in the air.

(4) Check whether there is object contact the platform and remove it if there is.

2. If it doesn't display weigh result when product pass through the weighing platform, check as follows:

（1）Check whether the device has been started, if not, start it.

（2）Check whether the light source and light barrier align, if not, the device cannot start work. Realign the light source and light barrier.

（3）Check whether product parameters are correctly set. If not, the checkweigher cannot work normally.