



DCS-20CB

Plate Batcher Installation Manual

Ewinall Packaging Machine Co., Ltd.

Statement

Dear user:

Thank you for purchasing the products of our company. We will provide the best services to make the product work well in your enterprise.

This manual will help you understand the installation and operation method as soon as possible. From this manual you can obtain the information about the product configuration, features, specifications, installation, operation and maintenance procedures. It is strongly recommend that you read this manual carefully before putting the product into operation.

The product is subject to modification and improvement without notice, but any such modification and improvement will not has any impact on the operation of your product.

Before putting this machine into operation, please check if the displayed weighing result conforms to your set value, and check the weight of the first few packages to ensure accurate weighing. It is also suggested that sample check should be made during each working shift for weighing accuracy. When any abnormality like inaccurate weighing or broken package occur, please call our after-sale-service department in time. The company will not be responsible for any damage if the user fail to get in touch with our after-sale-service department in time for maintenance.

If you have any complaint to the product or service, you can call the company's complaint hotline, and we will give you a satisfying reply with 24 hours.

Warning and notices

The manual includes warnings and notices to protect your safety and prevent damage to the machine and surrounding environment. These notices have the following specific representative significances, indicated by corresponding warning labels:



Warning

- 1) Beware of electric shock
- 2) Please turn off power switch in thunderstorm weather
- 3) The machine must be set in "manual" mode when cleaning or repairing the machine

Notices

! The E-quantitative scales should use its own dedicated power supply line and sockets, and a good grounding is a must.

- ! Do not turn on or off the machine by plugging in or pulling out the power plug.
- ! Do not put the e-quantitative scales near any flammable or explosive goods.
- ! Do not make any equipment with big current and high electromagnetic radiation such as electric welding machine connected to the power distribution line of e-quantitative scales.

! Turn off the machine and cut off the power supply immediately if there is anything abnormal (such as abnormal smell, etc.).

- ! Do not clean equipment with water, and do not operate the machine when your hand is wet.
- ! Turn off the main power supply before making any inspection, maintenance and cleaning.
- ! Do not put your fingers into the scale when it is in operation.
- ! Cut off the main power supply if the machine will not be used for a long time.
- ! Do not change the electrical wiring and mechanical structure of equipment without authorization.
- ! Do not pull or press "weighing bucket".
- ! Daily maintenance is a necessity, and clean the dust on the "weighing sensor" with a gas gun.
- ! Please read this manual carefully before using the equipment.

! Users shall assume the responsibility for the consequence caused by their failure to strictly enforce the relevant clauses of related regulations at their own, such as General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China's No. (2005) 75 Order "Measurement supervision and management method of quantitative package goods", No. (2001) 55 Order "Regulations on measurement assurance capability evaluation of manufacturing enterprise of quantitative package goods" issued by Administration of Quality and Technology Supervision and No. (1987) 31 Order "Verification management method for working measuring instrument verified compulsively by People's Republic of China" issued by the state.

- ! In case of failure and damage caused by the quality of the machine, the Company will provide free

repair within the warranty period. Users shall assume the responsibility at their own and the Company will charge the repair if the following conditions occur: ① improper handling and operation; ② disassembling products and replacing parts at their own; ③ external factors such as abnormal voltage and fire; ④ misuse.

Content

1 Introduction.....	1
2 Product description.....	1
2.1 Structure and principle of product.....	1
2.2 Features of DCS-20CB Plate Batcher.....	1
2.3 Technical Performance of DCS-20CB Plate Batcher.....	2
2.4 Brief Description of Control Instruments.....	2
3 Operation.....	3
3.1 Display and keyboard.....	3
3.1.1 Flow display area.....	4
3.1.2 Application parameter area.....	4
3.1.3 IO indicator area.....	4
3.1.4 Description of display icons.....	4
3.1.5 Definitions of Input and Output State Indicators.....	5
3.1.6 Definitions of key functions.....	5
3.2 Basic operation.....	6
3.2.1 Starting-up process.....	6
3.2.2 Zeroing.....	6
3.2.3 Static Calibration.....	6
3.2.4 Setting flow parameters.....	7
3.2.5 A1 Flow Coefficient.....	7
3.2.6 A2 Parameter setting.....	8
3.2.7 A3 Flow calibration.....	10
3.2.8 A4 Flow checking.....	10
3.2.9 View cumulative value.....	10
3.2.10 Clear cumulative flow value.....	10
3.2.11 Setting target value.....	10
3.2.12 Setting target tolerance value.....	11
3.2.13 Set the fast adjustment range.....	11
3.2.14 Setting zero flow range.....	11
3.2.15 Setting the preset total amount.....	11
3.2.16 Start and stop control with key.....	11
3.2.17 Flow control instruction.....	11
3.2.17.1 Remote/local control.....	11
3.2.17.2 Manual control.....	12
3.2.17.3 Automatic flow balance control.....	12
3.2.17.4 Automatic material level balance control.....	12
4 Maintenance and related adjustment of equipment.....	14
4.1 Equipment cleaning.....	14
4.2 Inspection of moving parts.....	14
4.3 Safety check of circuit.....	14
5. Analysis and Troubleshooting of Common Faults.....	14

1 Introduction

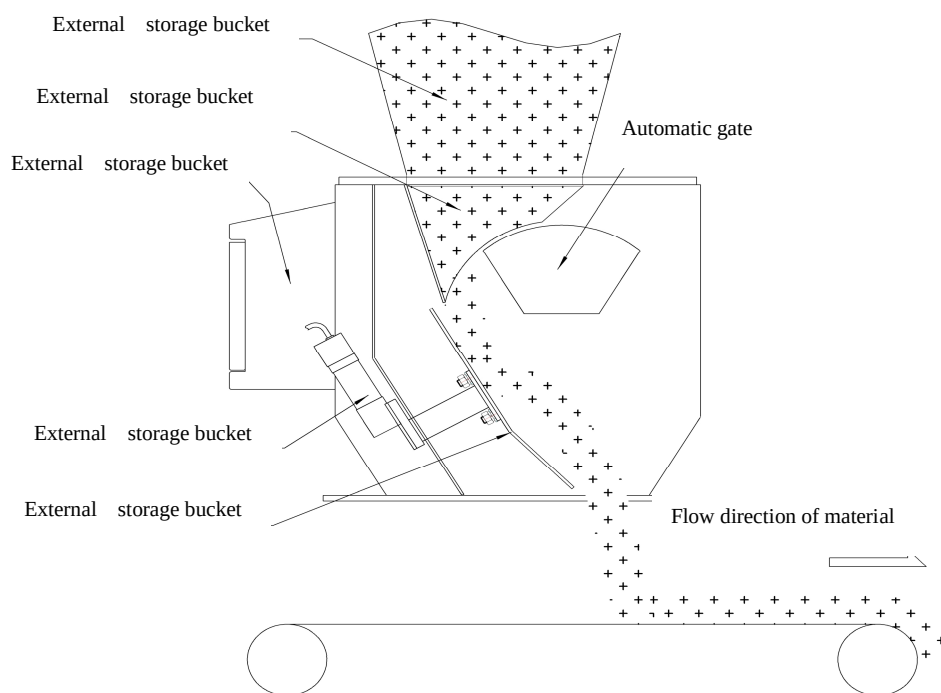
Functions, features and application scope of DCS-20CB Plate Batcher.

DCS-20CB Plate Batcher is a mechatronics high-tech product used in automatic batching process of the production line. The complete set of equipment consists of feeding mechanism, weighing mechanism and electric control system.

The batcher is used for the automatic batching process of the materials with good fluidity (such as rice, wheat, feed, plastic particles, etc.) on the production line.

2 Product description

2.1 Structure and principle of product



The working process of the batcher is as follow: after the instrument enters the automatic operation with the set target amount, the instrument controller controls the automatic regulating gate to open it slowly, the material starts to fall and impact the weighing plate, and then the weighing sensor receives the signal and transmits it to the instrument controller. After that, the controller compares it with the internal data. If the set target amount is not reached, the automatic regulating gate will continue to open until the target amount is reached.

2.2 Features of DCS-20CB Plate Batcher

- (1) It adopts high-precision weighing sensor and controller, and the controller is provided with 24-bit high-precision SIGMA-DELTA AD conversion chip and 300 Hz of effective output rate
- (2) All on-line equipment will stop running after error alarm is generated;
- (3) Easy to operate. The operator only needs to set the target flow and open the automatic knob, and then the equipment will directly enter the automatic operation state.
- (4) Flow measurement with high accuracy and stability

2.3 Technical Performance of DCS-20CB Plate Batcher

Technical Performance Indicator Table of DCS-20CB Plate Batcher

Specifications	DCS-20CB
Capacity (kg/h)	2000~20000 (kg/h)
Accumulative measurement accuracy	±1%
Supply voltage	AC 220V ±5% 、50Hz
Average power	40W
Working environment	Relative humidity <90% at 0℃~40℃, non-condensing
Environmental vibration	Amplitude:≤1mm ; Frequency:≤25 Hz

2.4 Brief Description of Control Instruments

BC500 Series Flow Controller is a high-quality controller with 32-bit advanced technology platform for mass flow measurement and control of bulk materials. BC500 takes the characteristics of industrial applications into full consideration, besides providing enough reliable input and output and communication interfaces, it can realize real-time fieldbus communication with PC, PLC, DCS and other devices by extending the optional interfaces. BC500 can be widely used in mass flow control and material level control in industries such as metallurgy, building materials, grain and feed.

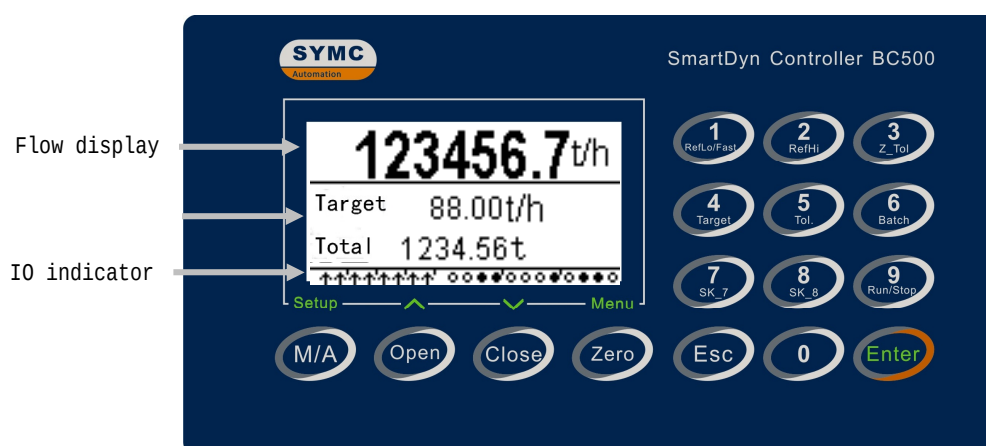


Main technical characteristics

Housing structure	Panel-type structure Front panel: SS304, IP65; housing body: aluminum alloy, IP42.
A/D processing	24-Bit bit high-precision low-temperature offset Σ - Δ conversion chip. 300Hz of typical sampling rate.
Display	2.71" 128x64 dot matrix LCD display; Chinese and English menu interface. The maximum display height of word is 0.7".
Keyboard	16 thin film touch keys.
Digital input	10 opti-electronically isolated digital input points. Active input mode (10-24 VDC).
Digital output	12 isolated MOSFET output points. 18-30VDC, 200mA, with overload protection.
Communication interface	2 separate isolated serial ports. Serial port 1:RS232; Serial port 2:RS485
Communication protocol	MODBUS-RTU
Application mode	Flow control, material level control, constant volume control
Power supply	100–240 VAC, 50/60 Hz, <100mA (@100VAC)
Service environment	Temperature: -10°C ~ +40° C; relative humidity: 10% - 90%, non-condensing

3 Operation

3.1 Display and keyboard



3.1.1 Flow display area

The flow display area shows real-time flow, which can display up to 7 digits with decimal points, and with word height of 11 mm.

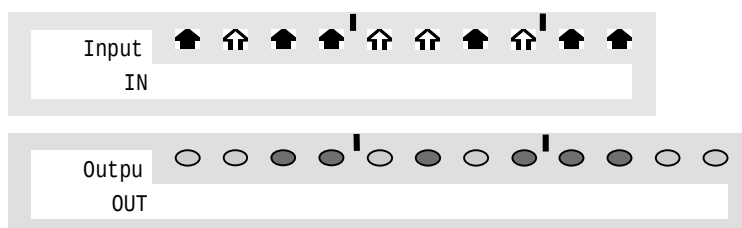
123456.7 t/h	
Target	88.00 t/h
Total	1234.56 t
↑↑↑↑↑↑↑↑ ○○○○○○○○●●●●	

3.1.2 Application parameter area

The application parameter area shows the relevant information in the current mode, such as target flow and cumulative weight.

3.1.3 IO indicator area

The bottom row of the main interface of instrument is the input and output status indicator. There are 10 input status indicators on the left and 12 output status indicators on the right. The corresponding relationship between the input and output point indication positions and the external interfaces is as follows:



3.1.4 Description of display icons

Icon	Definition
>O<	Zero center. This icon is displayed when the signal is near zero.
~	In motion. This icon is displayed when the weight signal is in motion.
↑	Valid input. When the input level is 10 ~ 24VDC, the input is valid by instrument detection.
↑↑	Invalid input. When the input level is 0 ~ 24VDC, the input is invalid by instrument detection.
●	Valid output. High output level (24VDC of external power must be used).
○	Invalid output. Low output level.

3.1.5 Definitions of Input and Output State Indicators

	Cursor	Function		Cursor	Function
In-put point	1	Start/Stop	Out-put point	1	Quick opening of arc door
	2	Remote/local		2	Slow opening of arc door
	3	Arc door test		3	Quick closing of arc door
	4	Interlock alarm input		4	Slow closing of arc door
	5	Charging position		5	Alarm (when the arc door is opened to the maximum)
	6	Discharging position		6	Total preset weight reached
	7	Limit On		7	Interlock alarm output
	8	Limit Off		8	Standby
	9	Clear alarm		9	Standby
	10	Standby		10	Standby
				11	Standby
				12	Standby

3.1.6 Definitions of key functions

Key	Key function
1. Numeric key	
0-9	Input parameters or weight values.
2. Shortcut keys	
1/RefLo/Fast	Shortcut 1: set the fast adjustment range. Unit: t/h. When the actual flow deviates from the target flow and exceeds the fast adjustment range, perform the fast adjustment.
3/Z-Tol	Shortcut 3: zero flow range. Unit: t/h. Setting of zero flow indication range.
4/Target	Shortcut 4: modify the flow target value.
5/Tol	Shortcut 5: set the target tolerance. Unit: t/h. When the actual flow deviation from the target flow exceeds the tolerance range and is lower than the fast adjustment range, perform the fine tuning.
6/Batch	Shortcut 6: In batch mode, it is valid and can be used to preset the total batch quantity. When the actual total amount reaches the preset total batch quantity, the system stops working.
9/Start/Stop	Shortcut 9: Start/stop key.

3. Long press keys	
SETUP	Press and hold to enter the instrument and sensor parameters setting menu.
MENU	Press and hold to enter the flow detection and control parameters menu.
0	Press and hold to clear cumulative value.
4. Function keys	
M/A	Switch between manual and automatic modes.
Close	Close the arc door. (Manual mode becomes valid)
Open	Open the arc door. (Manual mode becomes valid)
Zero	When the weighing plate has no load, press the key to zero the flow.
Esc	Cancel key. Discard the input or return to the previous menu, or the main interface.
Enter	Enter key. Confirm the input.
5.Auxiliary function key	(4 green auxiliary indicators)
Setup	Press and hold to enter the instrument and sensor parameters setting menu. (System Setting menu)
∧	Short press to select the previous one (valid under the menu mode)
∨	Short press, to select the next one under the menu mode; and to switch between pages under the automatic mode;
Menu	Press and hold to enter the flow detection and control parameters menu. (Application parameter menu)

Note: Shortcut keys are only valid when they are set to be enabled.

3.2 Basic operation

3.2.1 Starting-up process

After the BC500 is powered on, the self-check will be carried out in the following order.

Display self-check -> Enter the main interface. Each screen is displayed for 2 seconds.

3.2.2 Zeroing

Press the [Zero] button to perform the flow zeroing action.

After zeroing, the flow indicator and the plate load indicator both becomes zero.

3.2.3 Static Calibration

Before adjusting other parameters, in order to ensure the accuracy of measurement, please perform static calibration for the equipment first. Press and hold [Setup] to enter the menus of instrument and measurement parameters setting. Select the "Scale Calibration" branch from the primary menu tree and press [Enter] to enter the sub-menu. Static calibration includes zero calibration and measuring range calibration.

1) Zero calibration

After entering the "Scale Calibration" sub-menu, the "S1.4 Zero Calibration" interface will appear. Ensure the

weighing platform is free and stable, and perform zero calibration according to the prompt. After the zero point calibration is completed, it automatically enters the range coefficient calibration. If no range calibration is required, press [Cancel] key to exit.

2) Range calibration

In the "S1.4 Zero Calibration" interface, press the [Select] key to enter the "S1.5 Range Calibration" interface. Press [Enter] to enter the Range Calibration window, load the weight according to the prompt, and then complete the range calibration by pressing the Enter key. After calibration, press [Cancel] to exit.

Tips:

Before the first use, the instrument should be loaded with basic default values and then calibrated statically;

Please perform static calibration before the flow calibration and flow parameters setting;

3.2.4 Setting flow parameters

Press and hold the [Menu] key to enter the Flow Parameters menu. The menu contains the following submenus.

- ▼ A1 Flow Coefficient
- ▼ A2 Parameter Setting
- ▼ A3 Flow Calibration
- ▼ A4 Flow Checking
- ▼ A5 One-click Recovery
- ▼ A6 Reset to defaults

Tips: During the first use and flow parameter setting, please reset the flow parameters in the menu "Reset to defaults".

3.2.5 A1 Flow Coefficient

Check the branch of "A1 Flow Coefficient" and press [Enter] to enter the "A1.1 Flow Coefficient" interface. Users can view and modify the flow coefficient in this interface to facilitate the rapid debugging of the system.

Flow coefficient setting

C	Default coefficient value	Description
Kx01	0.0009	Set the flow coefficient of the equipment. Flow coefficients are usually obtained by flow calibration or flow correction. Users can also input flow coefficients directly based on their experience. Flow coefficient is the ratio of load to flow.

3.2.6 A2 Parameter setting

Check the branch of "A2 Parameter Setting", and then press [Enter] to enter the interface of "A2.1 flow parameters" to set the flow control parameters.

A2.1 Control parameter

Flow parameter	Range	Description
Kop	0.01~1.99	Adjustment coefficient for door opening steps. When the default is 1.00. $Kop > 1$, the adjustment range for door opening is greater than door closing range; while $Kop < 1.00$, the adjustment range for door opening is smaller than door closing range;
Tw d	0.1s~9.9s	Stabilization time. The default is 3 seconds. Set this parameter reasonably according to the actual characteristics of the equipment. The inappropriate parameters will lead to the jitter of controller. The stabilization time should be longer than that required for the impact plate to be loaded from zero to a fixed load.
F/s	0~9.9t/h/step	Step flow. The default is 0.018 t/h. For example, [A2.2 Step1] = 0.05s, it means that the flow increases or decreases by 0.5t/h for every 0.05 seconds when the arc door is opened or closed. The step flow and the step length of A2.2 are combined to achieve accurate flow control at different openings.

A2.2 Step time

Step time	Range	Description
Step1	0.001 - 9.999s	Step time for device action

A2.3 Upper loading limit and operation mode

Parameter	Range	Description
Maximum Load Fmax	1.000Kg - 20.000kg	The impact force when the arc door is opened to the maximum, in kg. Be sure to set this parameter correctly, otherwise the flow segment point will be incorrect. The default is 5kg.
Operation mode	Flow mode/material level mode/batch mode	When the flow mode is selected, the instrument adjusts the arc door to control the flow stably in the automatic state; When the material level mode is selected, the instrument controls the opening of the arc door based on the charging position and discharging position in the automatic state; When the batch mode is selected, the system will stop working after the total amount of the system reaches the preset batch amount (set by shortcut key 6).

A2.4 Control timer

Detection time	Range	Description
Tkc	0.1S - 99.9s	Delay in judging the bin is lack of material. The default is 60 seconds. When the arc door is opened to the upper limit, the Tkc time is delayed, if the flow rate is still less than the zero flow range, the alarm E20 for material shortage will be given.
		Interlock alarm delay. The default is 60 seconds. When Tls time is delayed in any system or equipment alarm, the controller OUT7 outputs interlock alarm. After all the alarms are released, OUT7 output is removed. Press the Elimination Alarm (IN9) key or press the [Enter] key to forcibly remove all alarms. If the fault persists, the alarm will be triggered again.
Tlq	0.1S - 99.9s	Air leakage detection delay. The default is 60 seconds. The timer triggers after it first enters the automatic operation mode. After Tlq delay time is reached, if the flow rate still does not reach the target value range, and the arc door is not opened to the upper limit, it will give air leakage fault alarm E22. The alarm disappears after the fault is removed. Press the Elimination Alarm (IN9) key or press the [Enter] key to forcibly remove all alarms. If the fault persists, the alarm will be triggered again.

A2.5 Control timer

Parameter	Range	Description
Tkm	0.1S - 99.9s	Maximum opening time. Used to limit the opening time for each adjustment step. When the adjusting opening time is greater than this parameter, the adjusting time is limited to 1/5 of the maximum opening time.
IN1 Start/Stop	Disable Local PLC Allow	Setting for start/stop input signal (IN1 for local machine). = Disable: In local mode, start and stop the device by shortcut key [9]; in remote mode, set it by means of communication; = Local: In local mode, start and stop the device through IN1; in remote mode, start and stop it by means of communication; = PLC: In local mode, start and stop the device by shortcut key [9]; in remote mode, start and stop it through IN1;

		= Allow: in both local and PLC modes, start and stop the device through IN1.
Flow update	0.1 - 9.9s	Set the time for flow update. The default is 0.5 seconds, i.e. the update frequency is 2 Hz.

3.2.7 A3 Flow calibration

Select the Flow Calibration branch and press the Enter key to enter the Flow Calibration window A3.1.

The window displays instrument signal internal code value: Wr: 200. and prompts: "press the Enter key to start";

Make sure to press the [Enter] key to start when the signal internal code value is zero, otherwise the flow will be calculated inaccurately. Users should press the [Enter] key before opening the gate to discharge material.

Make sure to press the [Enter] key when the signal is zero, and then the instrument starts to calculate and display the accumulated amount Qc in real time. When the signal is zero, the Qc is zero.

Open the gate, and Qc will be accumulated automatically. (Please be sure to open the gate within 5 seconds after pressing the Enter key, so that the flow of the impact plate will reach a stable value, and the instrument begins to collect the signal average after pressing the Enter key for 5 seconds!)

When all the materials get through, the impact signal returns to zero; and when Qc is no longer increasing or slowly increasing, press the [Enter] key again to enter the Actual Weight Input window.

After inputting the actual weight of material in this batch (kg), press the [Enter] key. And the instrument calculates and displays the coefficient of this section for 2 seconds and then returns to the Pending Calibration window.

After calibration, press [Cancel] to exit.

3.2.8 A4 Flow checking

Select the Flow Checking menu. Press the Enter key to enter the Flow Correction window A4.1.

The real-time flow "Flow: Xx.xxxt/h" appears in the window, and "press the Enter key to start" is prompted.

Load the calibrated standard flow weight to the weighing plate, and press the Enter key.

In the Correction Flow input box, input the flow checking value corresponding to the flow weight, and then press the Enter key. At this time, the flow is corrected to the flow value corresponding to the weight.

3.2.9 View cumulative value

In the stop state, press the [Select] key to switch the main interface, and the secondary information area can display the accumulative value and the real-time weight of the current weighing plate alternatively.

3.2.10 Clear cumulative flow value

Press and hold the [0] button for more than 2.5 seconds, and the instrument prompts "confirm to clear cumulative value?". Press the [Enter] key to clear the cumulative total value and cumulative total weight, and then press the [Cancel] key to discard the removal.

3.2.11 Setting target value

Press the shortcut key [5/Target] to pop up the target value input box. After entering the required value, press the [Enter] key to modify the target value, and then press the [Cancel] key to discard the modification.

3.2.12 Setting target tolerance value

Press the shortcut key [5/Tol] to pop up the target tolerance value input box. After entering the required value, press the [Enter] key to modify the allowable error range of target value, and then press the [Cancel] key to discard the modification.

When the actual flow rate is less than {target value - target tolerance}, the instrument opens the arc door slowly;

When the actual flow rate is greater than {target value + target tolerance}, the instrument closes the arc door slowly;

Setting the tolerance range can avoid repeatedly opening and closing arc door when the flow is near the target value.

3.2.13 Set the fast adjustment range

Press the shortcut key [1/RefHi/Fast] to pop up the fast adjustment range input box. After entering the required value, press the [Enter] key to modify the fast adjustment range, and then press the [Cancel] key to discard the modification.

When the actual flow rate is less than {target value - fast adjustment range}, the instrument opens the arc door fast;

When the actual flow rate is greater than {targetvalue + fast adjustment range}, the instrument closes the arc door fast;

3.2.14 Setting zero flow range

Press the shortcut key [3/Z-Tol] to pop up the zero flow range input box. After entering the required value, press the [Enter] key to modify the zero flow range, and then press the [Cancel] key to discard the modification.

3.2.15 Setting the preset total amount

Press the shortcut key [6/Batch] to pop up the target value input box. After entering the required value, press the [Enter] key to modify the preset total amount, and then press the [Cancel] key to discard the modification.

If you need to control the total amount of the current shift or perform quantitative charging, please enter the preset total amount in this input box, and then clear the accumulative value when the arc door is completely closed. Through manual or automatic opening of the arc door, the instrument continuously calculates the total amount of materials passing through the flowmeter. When the accumulative total amount reaches the preset total weight, the instrument closes the arc door for the purposes of quantitative charging or the control for total production of a shift.

3.2.16 Start and stop control with key

Press the shortcut key [9/Run/Stop] to start and stop the automatic flow control. Only in local mode (IN2 = OFF) can it be started and stopped with key.

3.2.17 Flow control instruction

3.2.17.1 Remote/local control

When IN2 is valid, the instrument is in the remote control state. At this time, the manual/automatic switching action is invalid. It will be controlled by upper computer through communication (MODBUS or PROFIBUS).

When IN2 is invalid, the instrument is in the local control state. At this time, users can perform manual/automatic switching, arc door opening and closing and other control functions.

3.2.17.2 Manual control

Press the Manual/Automatic Switch button to switch between manual and automatic modes.

In the Manual state, the action of opening and closing the arc door can be performed.

When pressing Open Arc Door button, the arc door will be opened, when releasing this button, the arc door stops opening;

When pressing Close Arc Door button, the arc door will be closed, when releasing this button, the arc door stops closing;

When the opening limit is reached, the arc door stops opening;

When the closing limit is reached, the arc door stops closing;

3.2.17.3 Automatic flow balance control

Press and hold the Menu key to enter the Flow Parameters menu. Enter the Parameters Setting submenu A2, press the select key to page down to A2.3, and set the operation mode to "Flow" mode. The instrument will perform flow balance control under the automatic state.

If the target flow is set, the instrument will open and close the arc door according to the current flow and the target flow automatically.

When the actual flow rate is less than (target value - allowable error), the instrument opens the arc door;

When the actual flow rate is greater than (target value + allowable error), the instrument closes the arc door;

In the Automatic mode, when IN1 = start (valid), the instrument continuously calculates the deviation between current flow and target flow, and controls the opening and closing of arc door according to the deviation automatically, so that the actual flow keeps approaching the target flow range.

When IN1 = stop (invalid), the instrument outputs the arc door closing signal (OUT3, OUT4) quickly, and lasts a period of arc door closing delay time (flow parameter T1, the default is 5 seconds), until the arc door is closed into place.

When the instrument is switched from automatic operation to manual operation, the instrument will stop the control output of the arc door to keep the arc door in the position before switching to manual mode, whether the instrument is opening or closing the arc door. Users can adjust the opening of the arc door by pressing the keys for opening and closing arc door.

3.2.17.4 Automatic material level balance control

When the working mode is set to the "material level" mode, the instrument can perform material level balance control under the automatic state. In this mode:

When the instrument detects that the charging position IN5 is valid, the instrument closes the arc door until it is in place.

When the instrument detects that the discharging position IN6 is valid, the instrument opens the arc door until it is in place.

If switching from automatic to manual, the instrument closes the arc door to the closing limit.

4 Calibration and Configuration

In Calibration and Configuration menu, the basic functions of the instrument can be set. Please enter this menu to configure the relevant parameters before using the instrument. This menu contains 7 sub-menus, S1 to S7.

In general, users only need to enter the "Scale Calibration" interface for static calibration. If you need to configure the communication parameters, please enter the "Communication" interface to set the communication parameters. If there is no special need, do not modify other parameters, otherwise the system will become unavailable.

Press and hold the [Settings] key to enter the Calibration and Configuration menu window. If the instrument parameter protection password is set in the Instrument Configuration menu, the password must be input before entering.

Key operation after entering the Instrument Configuration menu:

Press the [Select] key to cycle down the selections,

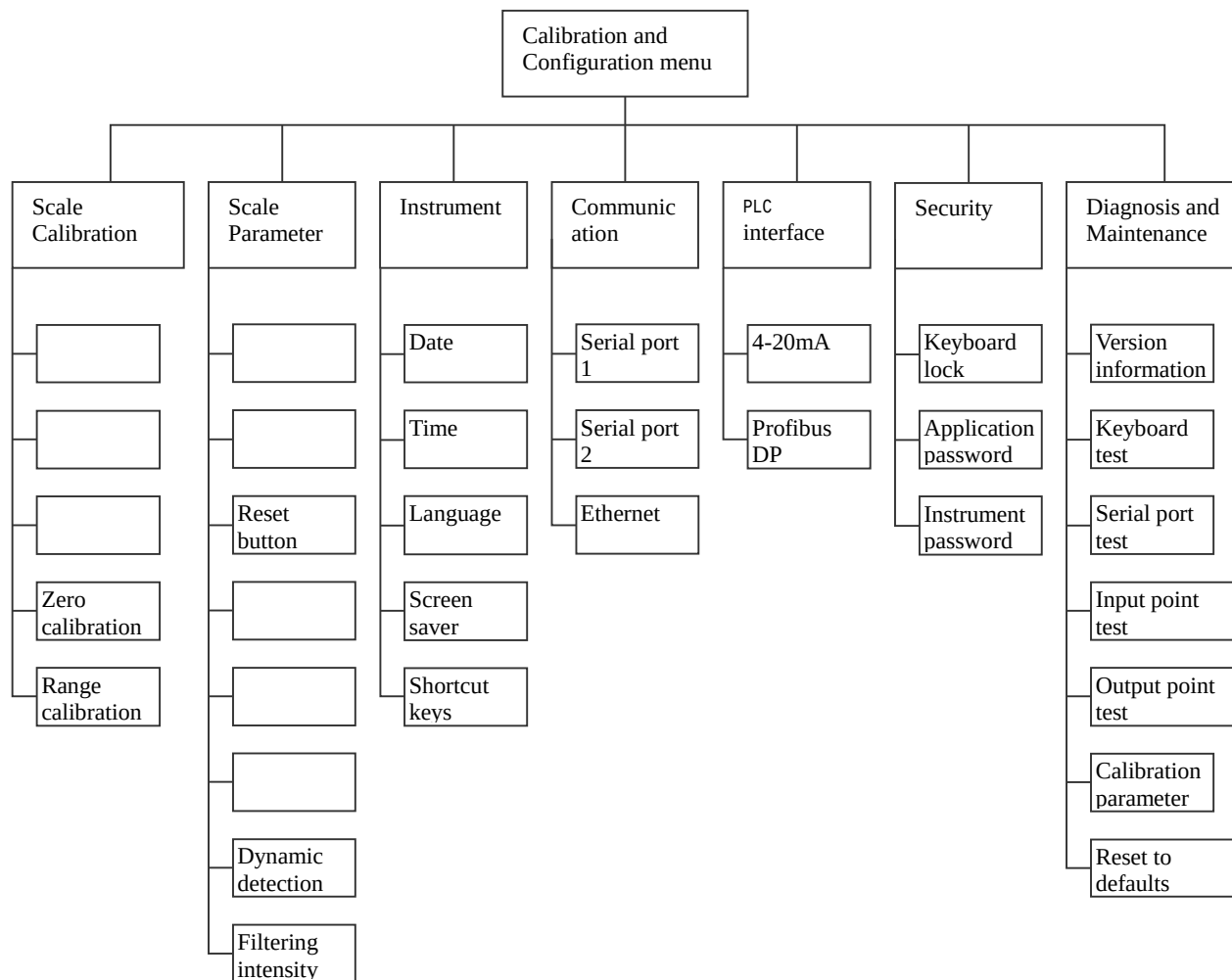
Press the [Function] button to cycle up the selections,

Press the numeric key to enter the value,

Press the [Enter] key to confirm the input, while the cursor selects the next parameter item.

Press the [Cancel] button to discard input until it returns to the main interface.

The structure of Calibration and Configuration menu is as follows:



4 Maintenance and related adjustment of equipment

4.1 Equipment cleaning

Since there may be a large amount of dust in the materials feeding in the equipment, the equipment should be kept clean, so as to ensure the operation performance and service life of the equipment. During cleaning process, the weighing sensor should be avoided under mechanical shock to ensure weighing precision. The electroplated parts of the equipment should be wiped with a little machine oil. Meanwhile, please open the front and rear door of the machine after the working of each shift to clear the dust with air gun.

4.2 Inspection of moving parts

The moving parts of the equipment should be checked frequently, especially motor drive fittings. Key points of inspection:

- ① The "nut" at the end of "fisheye connector" must be locked.
- ② Check the operation of fisheye connector frequently, and lubricate it at regular intervals with oil (machine oil or sewing machine oil) to increase its service life.

4.3 Safety check of circuit

Please turn off the power, stop production and unplug the power plug when it is in thunderstorm weather and concentrated lightning. If the voltage is abnormal in the workshop, please test the voltage in the socket first, and then turn on the power for production when the voltage is normal.

Check the circuit at regular intervals to prevent open circuit or poor contact which influence the production.

5 Analysis and Troubleshooting of Common Faults

Common phenomena:

Phenomenon	Cause	Solutions
No change in weight of impact plate during loading and unloading	1. No calibration or loss of calibration coefficient; 2. Loose sensor cable;	1. Re-calibration; 2. Check the sensor cable;
Calibration failed	1. Weighing plate is in motion; 2. Loading weight is less than 10%; 3. Sensor cable loosen or connected wrongly;	1. Carry out calibration after the scale body is stable; 2. Increase the loading weight; 3. Check the sensor connection;
" _____ " appears during start-up	The weight is lower than the negative display range;	1. Check if the sensor cable is connected in reverse direction; 2. Modify the negative display range; 3. Perform zero setting of the key; 4. Enable zero setting during start-up; 5. Re-correct the zero point;

" _ _ _ _ " appears during start-up	The weight exceeds the overload display range;	1. Modify the overload display range; 2. Check the load on the sensor and weighing platform;
Invalid shortcut keys	Shortcut keys are not enabled	1. Enable shortcut keys;
No response in zero setting	1. exceed the zero-setting range; 2. The scale body is in motion; 3. In automatic operation;	1. Clear the load on the weighing plate; 2. Remove load disturbance; 3. Stop the process;
Flow is not displayed	1. The instrument has no static and flow calibration; 2. The calibration coefficient is modified;	1. Perform static and flow calibration; 2. Reset to defaults
Accumulative value display error	1. The instrument has no static calibration; 2. The calibration coefficient is modified;	1. Clear cumulative value; 2. Perform static and flow calibration; 3. Reset to defaults

Table for Common alarm codes

Alarm codes	Cause	Fault analysis
E20	Lack of material	The arc door opens to the upper limit and the flow rate is still in the zero range. the bin door may not be open or the bin may be empty.
E21	Material blocking	The arc door opens to the upper limit. There is flow but the flow does not reach the target value. It indicates that blockage occurs and needs to be dredged.
E22	Air leakage	After the system enters the automatic operation state from stopping state and delays PR09 time, if the flow rate does not reach the target value, and the arc door can not be opened to the upper limit, the air leakage alarm will occur. Please check the air piping and arc door action mechanism.
E23	Arc door failure	When the arc door closes for PR01 time, the flow rate is still greater than the zero flow range. It indicates that the arc door is not closed in place within a given time. Please check the arc door action mechanism.
E24	Sensor failure	The sensor signal is larger than 10% of the maximum load, or less than 20% below zero. Please check the sensor installation and wiring.
E25	Correlative alarm	External interlock alarm input. It indicates that other related equipment is out of order and the equipment should stop immediately after receiving this signal.
E26	Reaching the Opening Limit	The arc door opens to the upper limit. Meanwhile, OUT5 will be turned on.
E27	Accumulative value overflow	The cumulative value is unreadable. Clear cumulative value. Reset application parameters (enter window [A6.1]).

Specification and dimension are subject to change without notice.



Ewinall Packaging Machine Co., Ltd.

Add/Gaocheng East Road , Economic Development Zone , Lu'an City,

Anhui province ,China Pc./237161

Tel / (86 564)3847777 3832630

Fax / (86 564)3847333 <https://ewinall.com>