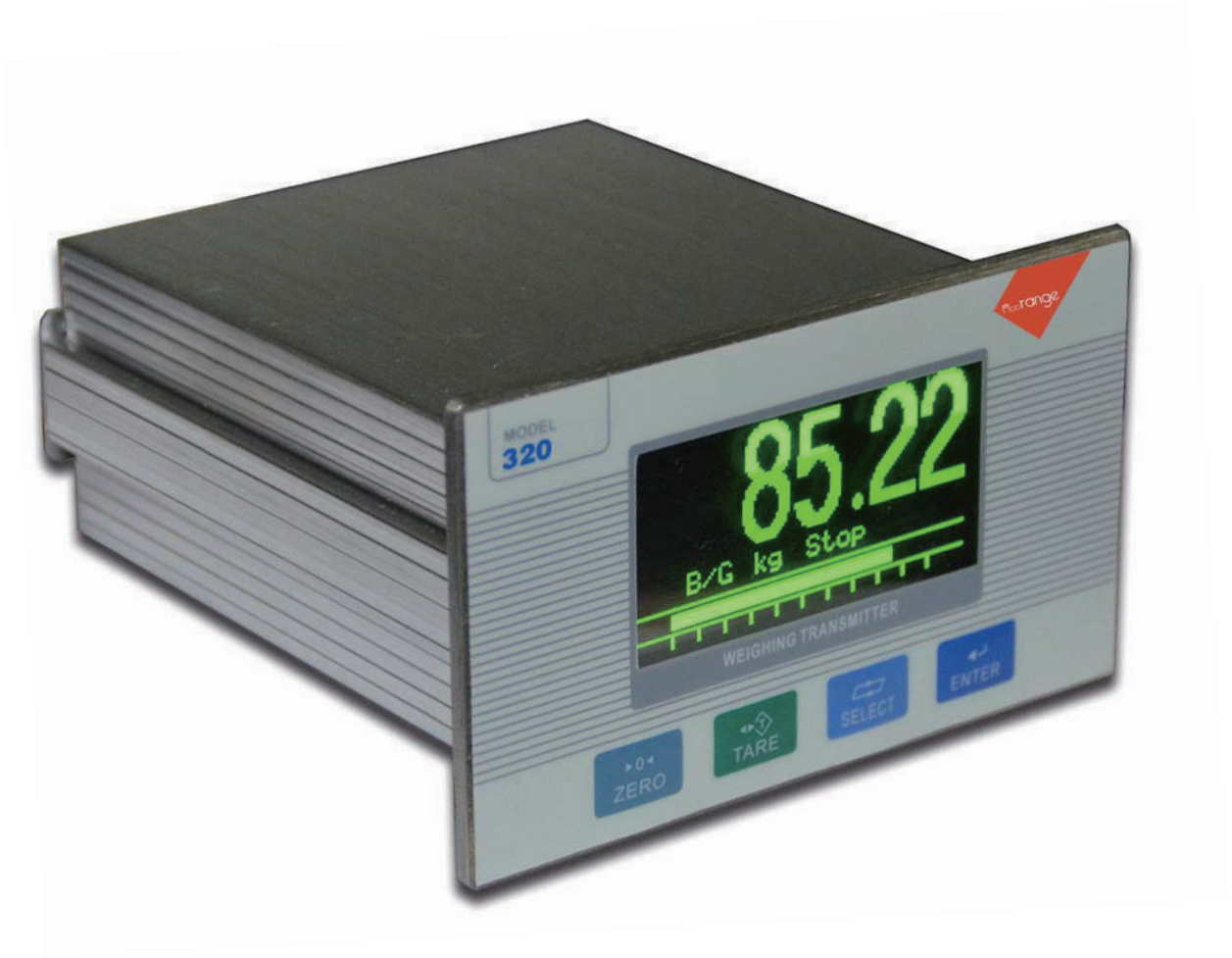
Value Each Gram A professional weighing products manufacturer and supplier




# WEIGHT TRANSMITTER Y320

# User Manual

v.201811

HiWEIGH Weighing system & solution
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Value Each Gram

HiWEIGH
Weighing system & solution

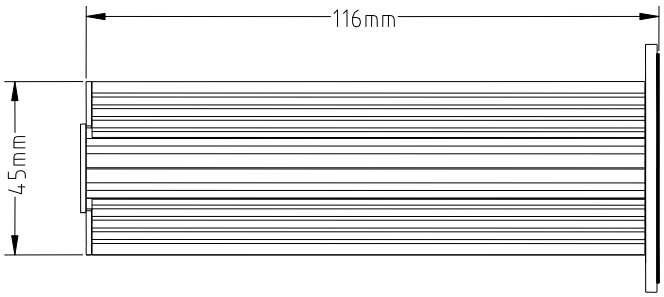
CONTENTS

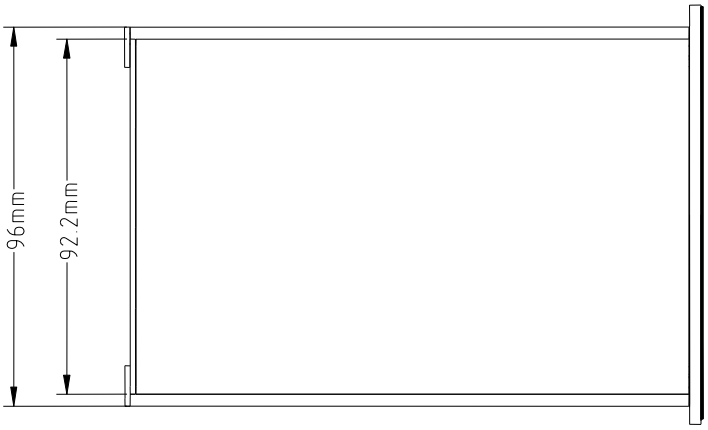
## 1. MAIN SPECIFICATIONS

| Specifications | |
|---|---|
| Housing | Metal shielded housing, with OLED display |
| dimensions(w × h × d) | 110mm×62mm×116mm |
| Protection | IP65 (front panel) |
| Operation Condition | Temperature：-10℃～40℃ (14°～104° F)<br>Relative humidity：10%~95%，non-condensing |
| Power | +24VDC（±15%），Consumption <6W |
| Display | 128×64 dot matrix、Yellow-Green OLED |
| Display resolution | Max.100,000 |
| Platform | 1 with analog load cell |
| Load cells | 1～6 x 350 Ohm（Sensitivity is 2 or 3mV/V） |
| A/D Speed | 200Hz (200times/s) |
| Excitation Voltage | 5VDC |
| Min.Input sensitivity | 0.6μV/d |
| Keypads | 4 function keys |
| Basic | Serial Output： RS232 or RS485<br>I/O interface： 1xIn 4xOut |
| Optional | I/O interface：4xIn 8xOut<br>Analog signal<br>0～20mA、4～20mA、0～24mA<br>0～10V、0～5V、-5～+5V、-10～+10V |

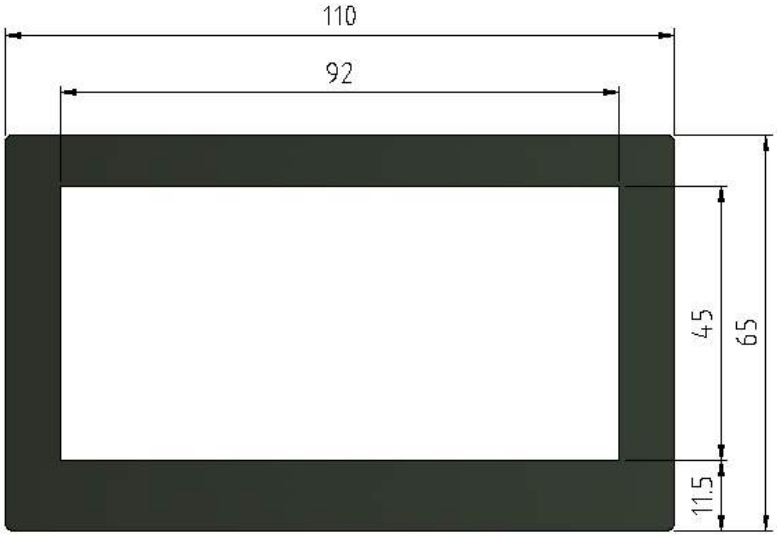
## 2. DIMENSIONS

**Housing Dimensions**



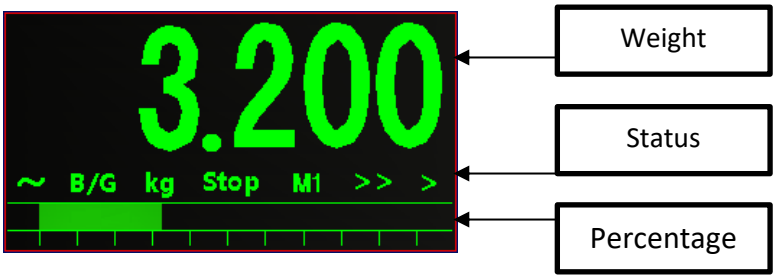

**Installation dimensions**




Installation hole size 92×45mm

## 3. Front Overlay and Keypad


Display



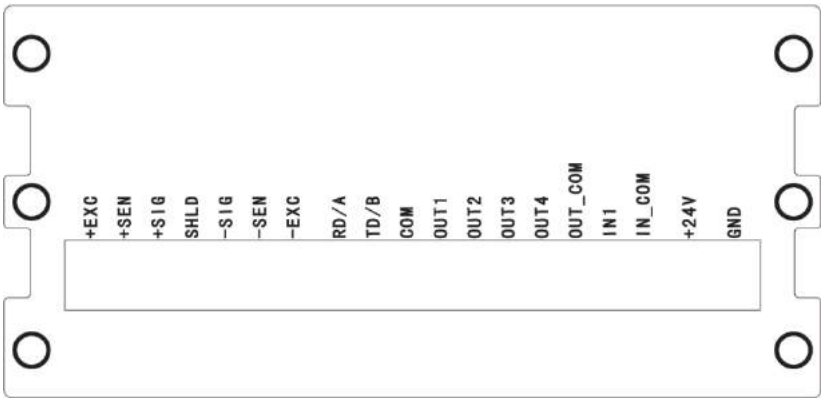

Signs

| Status | Note |
|---|---|
| ~ | Stable, on for dynamic mode, off for static mode |
| **B/G** | Gross weight |
| **Net** | Net weight |
| **Kg** | Unit |
| **Stop** | Stop |
| **Run** | Run |
| **M1~M4** | Material 1-4 |
| **>>** | Fast filling |
| **>** | Fine filling |

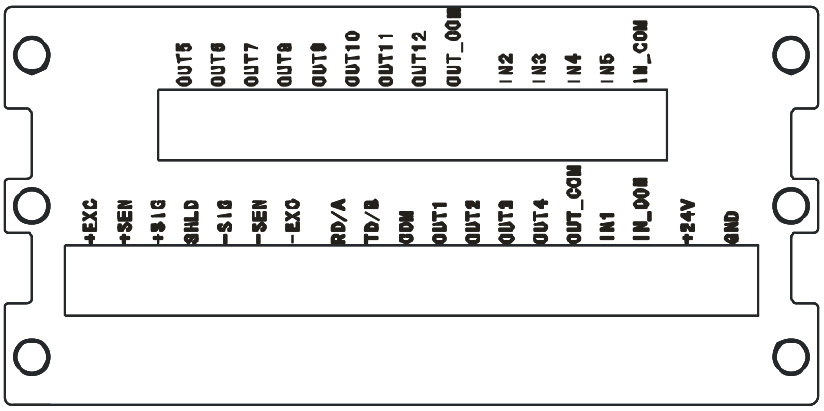
Keys' functions for parameter set or choose

| Keys | Menu | Parameter set | Parameter Input |
|---|---|---|---|
| ▸0◂ ZERO | Return | Return | Cancel and Quit |
| TARE | Up | Previous | Increase digits |
| SELECT | Down | Next | Move right |
| ENTER | Enter | Quit confirm | Quit confirm |

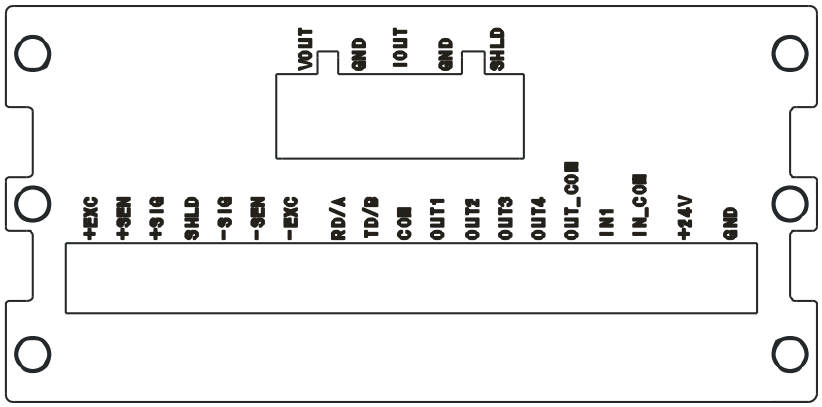
## 4. Rear Back Interface




Y320 Basic




Y320-IO Type




Y320-DA Type

## 5. Load Cell Interface

It can be connected with 6x350Ω analog load cells (around 58Ω minimum resistance), to confirm the range of the load cells, the total resistance (TSR) can be calculated with the formula as below:

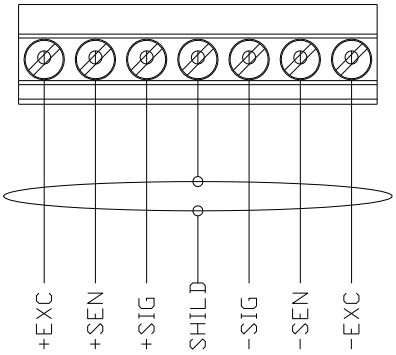
$$TSR = \frac{\text{Input resistance（Ω）}}{\text{Load cell numbers}}$$

Before connecting the load cells, make sure the TSR is above 58Ω, if it's less, the indicator can't work. Besides this, the cable distance must be considered, too, below is the maximum distance suggested:

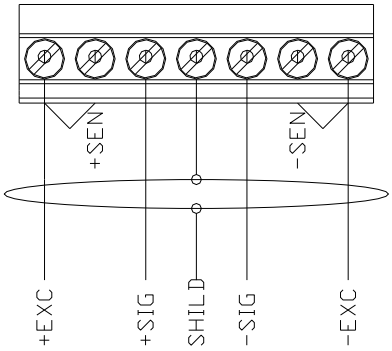
| TSR （Ω） | 24# cable (m) | 20# cable (m) | 16# cable (m) |
|---|---|---|---|
| 350 | 243 | 610 | 1219 |
| 58（6-350 Ω） | 40 | 122 | 224 |

Load cell interface definitions:

| Pins | Signal | Note |
|---|---|---|
| +EXC | +Excitation | 4-wire load cells short connected |
| +SEN | +Sense | |
| +SIG | +Signal | |
| SHD | Shield | |
| -SIG | -Signal | |
| -SEN | -Sense | 4-wire load cells short connected |
| -EXC | -Excitation | |



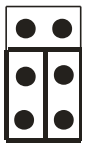
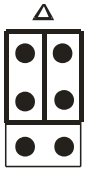

6-wire load cell or junction box




4-wire load cell or junction box

## 6. Serial Interface

It has only one serial interface, to change it by switch for RS232 or RS485，method as below:

| Pins | RS-232 | RS-485 |
|---|---|---|
| Bridge Joint / Pin signs | Rear △  ▽ Front | Rear △  ▽ Front |
| RD/A | RS-232 Receive | RS-485A |
| TD/B | RS-232 Transmit | RS-485B |
| COM | Ground | Blank |

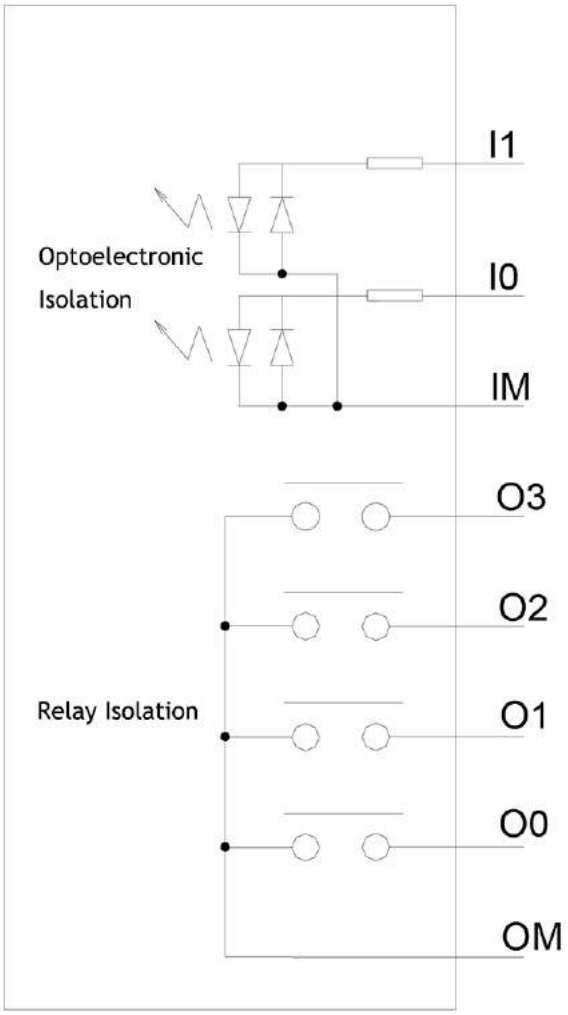
## 7. I/O

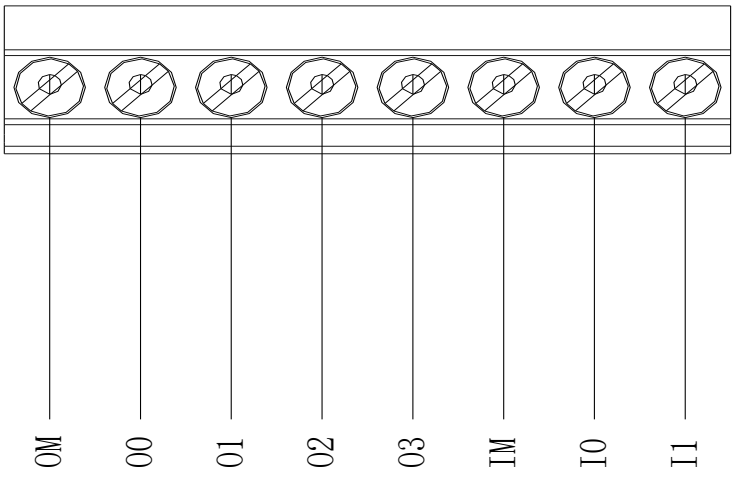
The basic type has one passive input and 4 relay open output

Basic type Pin’s definitions：

| Pins | Signal | Note |
|---|---|---|
| OUT1 | Output 1 | Output properties:<br>AC：30～250VAC/1A<br>DC：5～30VDC/2A |
| OUT2 | Output 2 | |
| OUT3 | Output 3 | |
| OUT4 | Output 4 | |
| OUT_COM | Output common port | |
| IN1 | Input 1 | High level：10～24VDC<br>Low level：0～3VDC |
| IN_COM | Input common port | |

I/O interface drawing:




Output – OM/O0/O1/O2/O3

Input – IM/I0/I1

Y320-IO has 4 passive input and 8 relay open output

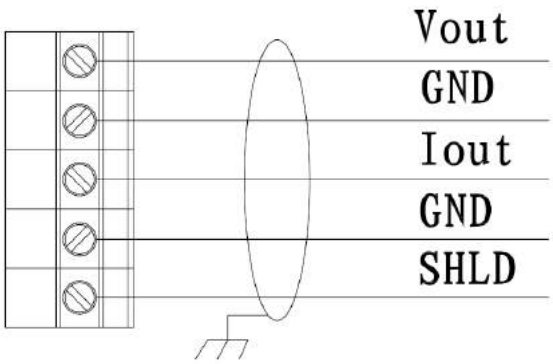
Pins definitions：

| 引脚 | 信号 | 说明 |
|---|---|---|
| OUT5 | Output 5 | Output properties:<br>AC：30～250VAC/1A<br>DC：5～30VDC/2A |
| OUT6 | Output 6 | |
| OUT7 | Output 7 | |
| OUT8 | Output 8 | |
| OUT9 | Output 9 | |
| OUT10 | Output 10 | |
| OUT11 | Output 11 | |
| OUT12 | Output 12 | |
| OUT_COM | Output common port | |
| IN2 | Input 2 | High level：10～24VDC<br>Low level：0～3VDC |
| IN3 | Input 3 | |
| IN3 | Input 3 | |
| IN4 | Input 4 | |
| IN_COM | Input common port | |

## 8. Analog Quantity Output

Y320 supply many types of analog signals which with proportional output according to the weight of the scale

| Pins | Signal | Note |
|---|---|---|
| VOUT | Voltage output | Output resistance 0～600Ω, output can be：<br>0～＋5V；0～＋10V；-5V～＋5V；-10V～＋10V; |
| GND | Voltage output | |
| IOUT | Electric current output | Output can be：<br>4mA～20mA；0mA～20mA；0mA～24mA |
| GND | Voltage output GND | |
| SHLD | Shield | |




## 9. Parameter Set

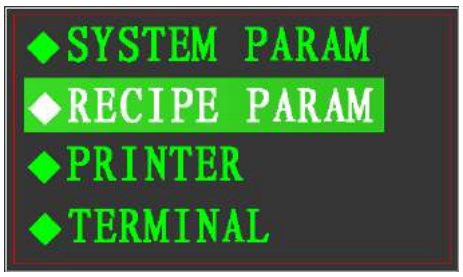
### 9.1 Enter setting menu

On weighing mode，keep pressing ENTER key to enter parameter setting mode.

### 9.2 Quit Setting

On any mode，continuous press ZERO key to return to previous step or quit the setting mode.

### 9.3 Main Set Menu




Press SELECT key or TARE key to select the menu to be set, press ENTER key to enter secondary menu, press ZERO key to quit the set

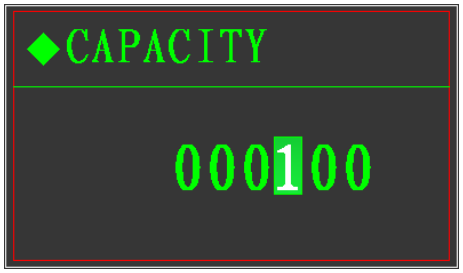
### 9.4 System Parameter Set


Press SELECT key or TARE key to select the menu to be set, press ENTER key to enter the chosen menu, press ZERO key to return to previous step.

### 9.4.1 Scale Set

| | |
|---|---|
|  <br>  | Press SELECT key or TARE key to select the menu to be set, press ENTER key to enter the chosen menu, press ZERO key to return to previous step. |

*Max.capacity*

| | |
|---|---|
|  | Range: 1～200000. Default：100.<br>Press SELECT key to move the cursor, press TARE to change the chosen digits, press ENTER to save to return to previous step.<br>Press ZERO key to return to previous step without change |

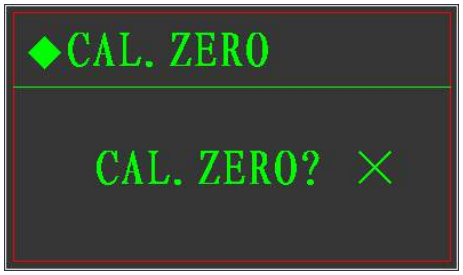
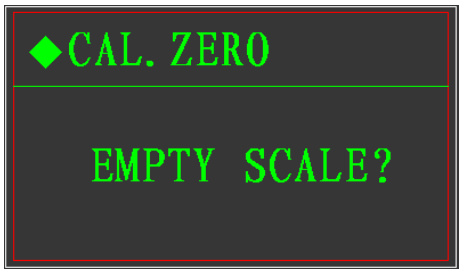
*Division*

| | |
|---|---|
|  | Division to be chosen：0.0001，0.0002，0.0005，0.001，0.002，0.005，0.01，0.02，0.05，0.1，0.2，0.5，1，2，5. Default: 0.001<br>*Note: Only the below two conditions ok, the chosen division can be accepted:*<br>1：1000 =< F.S./Division = < 20000.<br>2：F.S./Division = multiple of 100.<br>Press SELECT or TARE key to change the division, Press ENTER Enter to save and return, press ZERO key to return without change |

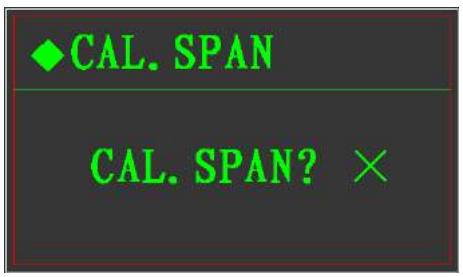
*Calibration Unit*

| | |
|---|---|
|  | Press SELECT or TARE key to change the division, Press ENTER Enter to save and return, press ZERO key to return without change |

*Zero Calibration*

| | |
|---|---|
|  | Press ZERO key to return without change<br>Press SELECT or TARE key to choose √ or X,<br>If √ chosen, press ENTER key to enter zero calibration, or return directly. |
|  | When there is nothing on the scale and it's stable, press ENTER key to start zero calibration. |
|  | The indicator is sampling the A/D data of zero point, it ends when it became 0% from 100%. |

*Weight Calibration*

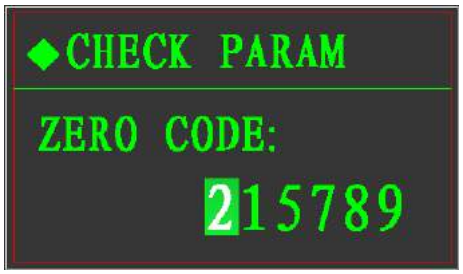
| | |
|---|---|
|  | Press ZERO key to return without change<br>Press SELECT or TARE key to choose √ or X,<br>If √ chosen, press ENTER key to enter weight calibration, or return directly. |

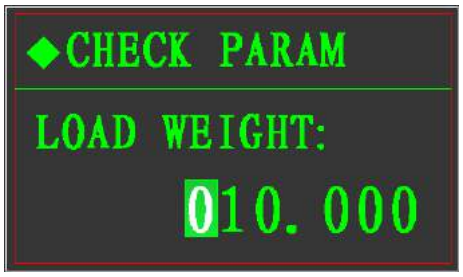
| | |
|---|---|
|  | Put the weight on the scale |
|  | Input the weight value the same as the calibration weight<br>Press SELECT key to move the cursor.<br>Press TARE key to change the digits.<br>Press ENTER key to save the change and start to calibrate.<br>Press ZERO key to cancel and return. |
|  | The indicator is sampling the A/D data of calibration point, it ends when it became 0% from 100%. |
|  | The weight value is too small.<br>Trouble shooting:<br>1、 The weight is really too light.<br>2、Wrong connection of the signal cable or excitation cable |
|  | Calibration done. |

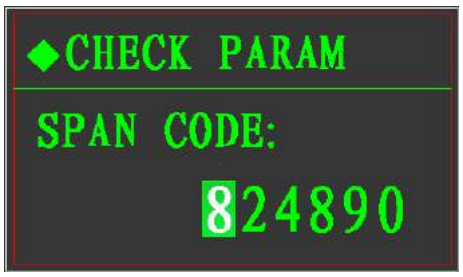
*Full Calibration*

*This calibration is jointed the zero calibration and weight (capacity) calibration, prease refer to above steps.*

*Calibration parameters*




This parameter can be retrieved and can be modified, after tested well, please record those three parameters for use in future.

When the data in EEPROM get problem, reload those three parameters, it doesn't need to do calibration again.

If the same model indicator to be changed and those three parameters reloaded, it doesn't need to do calibration, either.

Input the weight value the same as the calibration weight

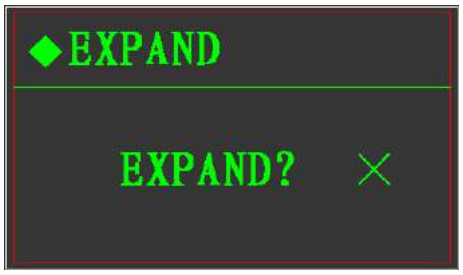
Press SELECT key to move the cursor.

Press TARE key to change the digits.

Press ENTER key to save the change and enter next parameter.

Press ZERO key to cancel and return.

*Expansion Display*




If 10 times resolution display needed, open the expand display:

Press ZERO key to cancel and return.

Press SELECT or TARE key to chose √ or X

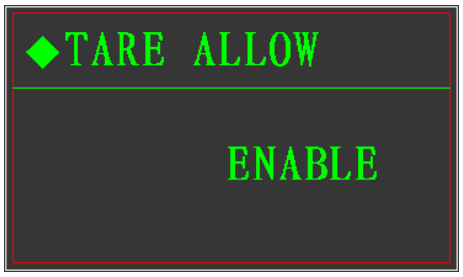
Press ENTER key to confirm and return.

### 9.4.2 Operation Set


Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.

Press ZERO key to return the previous step.

*Tare Operation*




Choices: Disable tare
Enable tare

Press SELECT or TARE key to change

Press ENTER key to save and return.

Press ZERO key to cancel and return.

*Zero upon Power on*

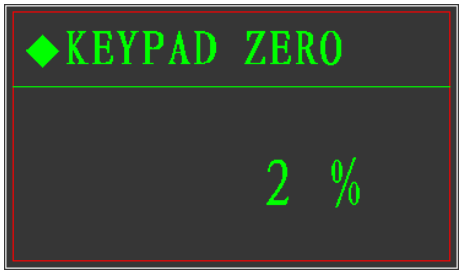

Choices: 0%, 2%, 20%

Press SELECT or TARE key to change

Press ENTER key to save and return.

Press ZERO key to cancel and return.

*Zero by Keypad*




Choices: 0%, 2%, 20%

Press SELECT or TARE key to change

Press ENTER key to save and return.

Press ZERO key to cancel and return.

*Zero Tracking*


0：None；　　1：0.5d；

2：　1d；　　3：　2d；

4：　3d；　　5：　4d；

6：　5d；

Press SELECT or TARE key to change

Press ENTER key to save and return.

Press ZERO key to cancel and return.

Vibration checking


0：None

1：Vibration checking range = 1d；

2：Vibration checking range = 2d；

3：Vibration checking range = 3d；

4：Vibration checking range = 4d；

5：Vibration checking range = 5d；

Press SELECT or TARE key to change

Press ENTER key to save and return.

Press ZERO key to cancel and return.

*Digital filtering*


Set range of 1-9, the more, the weight is more stable and the longer time to be stable.

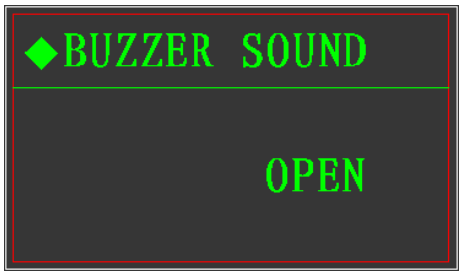
*Normally, if the digital filtering number set to be higher, the advance volume should be bigger, so on the batching mode, the advance volume needs to be adjusted again after the filtering number changed.*

Press SELECT or TARE key to change

Press ENTER key to save and return.

Press ZERO key to cancel and return.

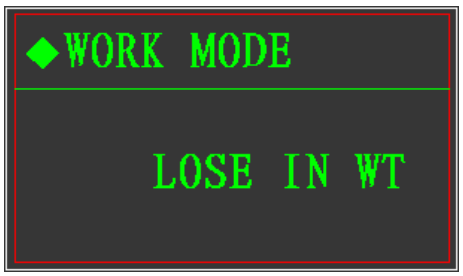
*Buzzer Set*

| | |
|---|---|
|  | On or Off<br>Press SELECT or TARE key to change<br>Press ENTER key to save and return.<br>Press ZERO key to cancel and return. |

### 9.4.3 Batching Set

| | |
|---|---|
|  <br>  <br>  <br>  | Press SELECT or TARE key to chose the menu to be set.<br>Press ENTER key to enter.<br>Press ZERO key to return previous step. |

*Batching mode:*



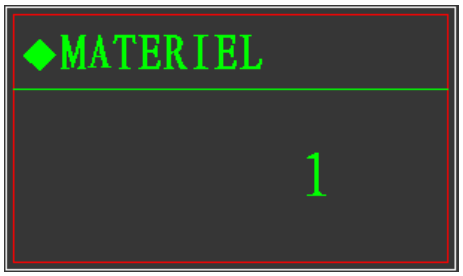

Choices： 4 materials batching
Single material weight lose
Free setpoint.

Press SELECT or TARE key to change

Press ENTER key to save and return.

Press ZERO key to cancel and return.

*Material quantity*




If there is no I/O board, it can be set to be 1 only.
If there is the I/O board, it can be set from 1-4.

Press SELECT or TARE key to change

Press ENTER key to save and return.

Press ZERO key to cancel and return.

*Feeding door*


1：single door single speed
2：double doors double speed

If there is no I/O board, only M1 can be set

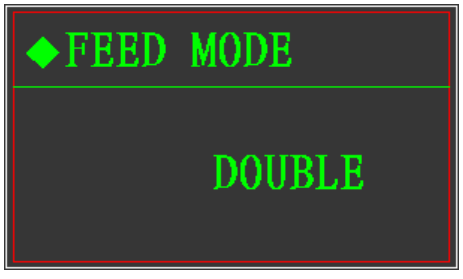
Press SELECT key to move cursor.

Press TARE key to modify the chosen digits.

Press ENTER key to save and return to previous step.

Press ZERO key to cancel and return to previous step.

*Feeding mode*

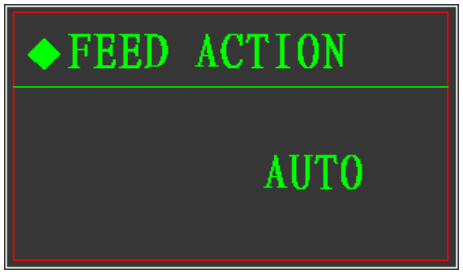



This parameter only valid for double doors and double speed
All open: On fast feeding, open two doors at the same time.
One open: On fast feeding, open fast feeding door.

Press SELECT or TARE key to change

| | |
|---|---|
| | Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |

*Feeding action*

| | |
|---|---|
|  | Choice：Auto or manual<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |

*Discharge mode*

| | |
|---|---|
|  | Choice：Auto or manual<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |

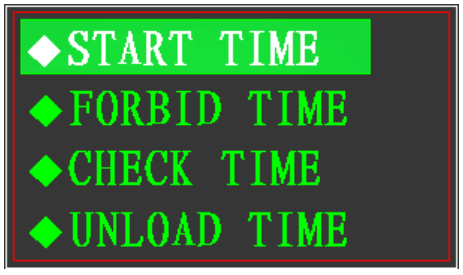
*Empty scale range*

| | |
|---|---|
|  | Choice：0%～9.9%×F.S<br>Only the weight on the scale is less than this range and the cursor and output is effective, otherwise it's taken as not empty.<br>Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |

*Frequency Adjust*


Choice：0～9
When it set to be 0, it means no adjust
Press SELECT or TARE key to change
Press ENTER key to save change and return.
Press ZERO key to cancel and return.

*Time Parameter*




Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.
Press ZERO key to return the previous step.

*Delay start time*

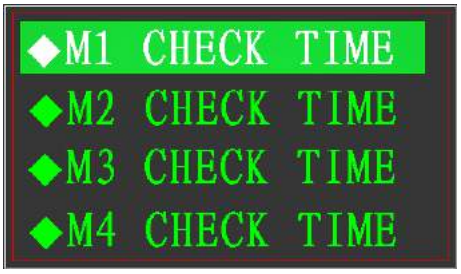

Choice：0.0～9.9 seconds
After batching start, after the delay time, it can start to tare, open the door and start to feed.
Press SELECT key to move cursor.
Press TARE key to modify the chosen digits.
Press ENTER key to save and return to previous step.
Press ZERO key to cancel and return to previous step.

*Comparing time forbidden*


Choice：0.0～9.9 seconds
The comparing time of fast and fine feeding both to be set in this menu.
Press SELECT key to move cursor.
Press TARE key to modify the chosen digits.

| | |
|---|---|
| | Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |

*Delay checking time*

| | |
|---|---|
|  <br><br>Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |  <br><br>Choice：0.0～9.9 seconds, the stabling time after batching finish of material 1<br>  <br><br>Choice：0.0～9.9 seconds, the stabling time after batching finish of material 2<br>  <br><br>Choice：0.0～9.9 seconds, the stabling time after batching finish of material 3<br>  <br><br>Choice：0.0～9.9 seconds, the stabling time after batching finish of material 4 |

*Delay time of discharge*


Choice：0.0～9.9 seconds.

When it reach to the range of empty scale, it will close the door after this time, to make sure full discharge.

Press SELECT key to move cursor.

Press TARE key to modify the chosen digits.

Press ENTER key to save and return to previous step.

Press ZERO key to cancel and return to previous step.

*Tolerance checking frequency*


Choice：0～99

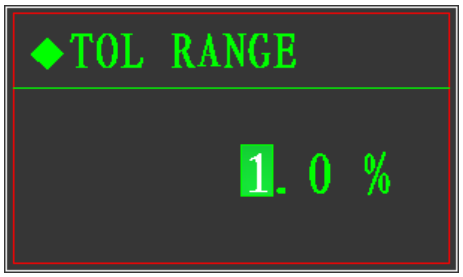
Checking tolerance after the times of batching, if it was set of 0, it will not check.

Press SELECT or TARE key to change

Press ENTER key to save change and return.

Press ZERO key to cancel and return.

*Tolerance range set*




Choice：0%～9.9%×Target weight

When it checking, if value of the actual weight minus the target weight is less than this value, it will be taken as ok, if not, it's out of tolerance range.

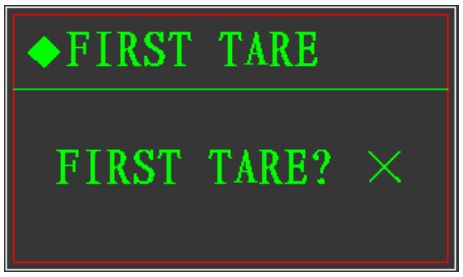
Press SELECT key to move cursor.

Press TARE key to modify the chosen digits.

Press ENTER key to save and return to previous step.

Press ZERO key to cancel and return to previous step.

*First material tare*



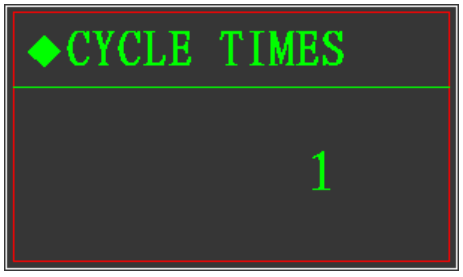

×：The first material doesn't need tare
√：The first material need tare

Press SELECT or TARE key to change

Press ENTER key to save change and return.

Press ZERO key to cancel and return.

*Cycle times of batching*




It will stop after this cycle times.

Press SELECT or TARE key to change

Press ENTER key to save change and return.

Press ZERO key to cancel and return.

*Adjust range*


Choice：0%～9.9%×Target weight
Only the value of actual weight minus target weight is less this range, it goes to adjust, when it's set to be 0, this function off.

Press SELECT key to move cursor.

Press TARE key to modify the chosen digits.

Press ENTER key to save and return to previous step.

Press ZERO key to cancel and return to previous step.

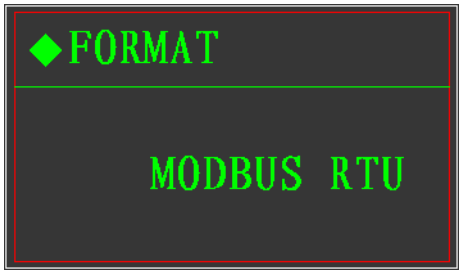
**9.4.4 Communication protocol**


Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.

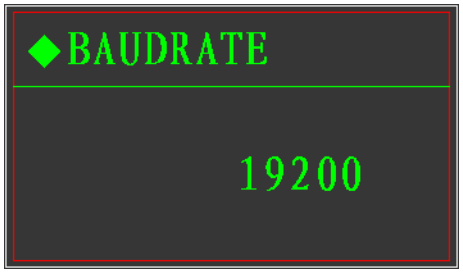
Press ZERO key to return the previous step.

| | |
|---|---|
|  | |

*Output mode*

| | |
|---|---|
|  | No output<br>Continuous output format A<br>Command output format A<br>Continuous output format B<br>Command output format B<br>MODBUS RTU output<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |

*Baud rate*

| | |
|---|---|
|  | Choice:300 bit/s; 600 bit/s;<br>1200 bit/s; 2400 bit/s;<br>4800 bit/s; 9600 bit/s;<br>19200 bit/s; 38400 bit/s;<br>57600 bit/s; 115200 bit/s;<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |

*Parity check*

| | |
|---|---|
|  | Choice: 8 digits no parity check<br>7 digits even parity check<br>7 digits odd parity check<br>8 digits even parity check<br>8 digits odd parity check<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |

*Checksum*


Choice: No transmitting
Transmitting

Press SELECT or TARE key to change

Press ENTER key to save change and return.

Press ZERO key to cancel and return.

*Indicator address*


Choice: 1—64
Keep the uniqueness of address in the same network

Press SELECT key to move cursor.

Press TARE key to modify the chosen digits.

Press ENTER key to save and return to previous step.

Press ZERO key to cancel and return to previous step.

**9.4.5 Analog quantity output**


Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.

Press ZERO key to return the previous step.

*Output type choose*

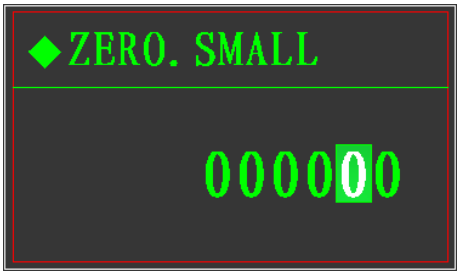
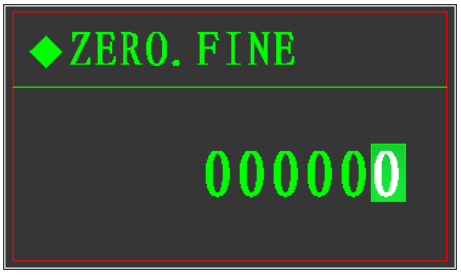

Choice：0～＋5V； 0～＋10V；
－5V～＋5V； －10V～＋10V；
4mA～20mA； 0mA～20mA；
0mA～24mA；

Press SELECT or TARE key to change

Press ENTER key to save change and return.

| | |
|---|---|
| | Press ZERO key to cancel and return. |

*Zero calibration (coarse-small-fine)*

| | |
|---|---|
|  <br>Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter. Press ZERO key to return the previous step. |  <br>  <br>  |

Full scale calibration (coarse-small-fine)

| | |
|---|---|
|  <br>Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter. Press ZERO key to return the |  <br>  |

| | |
|---|---|
| previous step. |  |

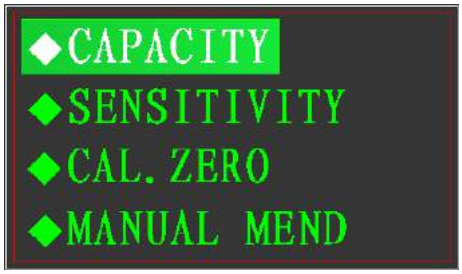
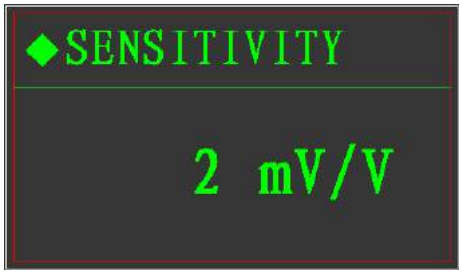
### 5.4.6 Diagnosis and maintenance

| | |
|---|---|
|  <br>  | Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |

*Reload*

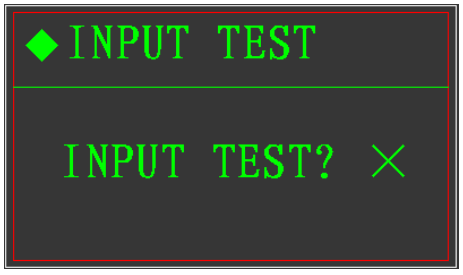
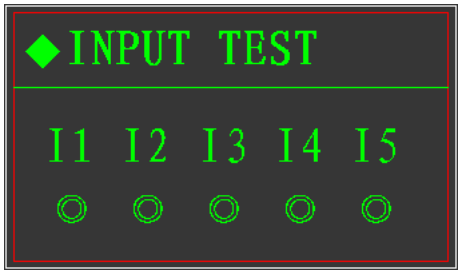
| | |
|---|---|
|  | Choose √ to reload the default parameters |
|  | Reloading… |

*Free calibration*

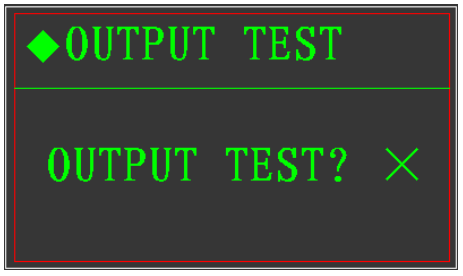
| | |
|---|---|
|  | Choose √ to enter |
|  | Menus<br>Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |
|  | Input the full capacity of load cells<br>Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |
|  | Input the sensitivity of load cells<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |
|  | Zero calibration |

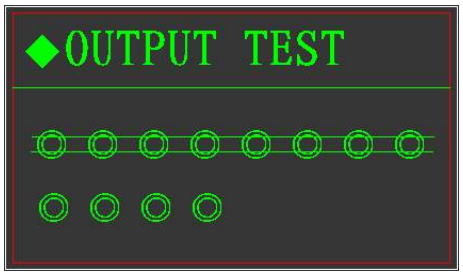
| | |
|---|---|
|  | |
|  | Adjust the present weight manually<br>Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |

*Input interface test*

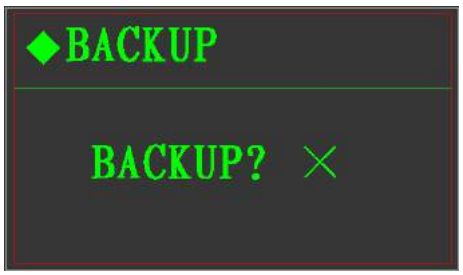
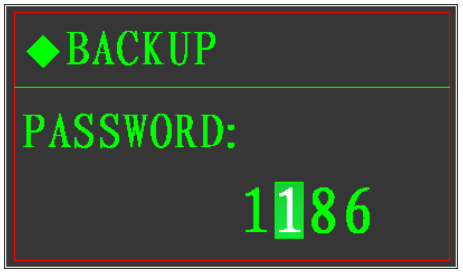
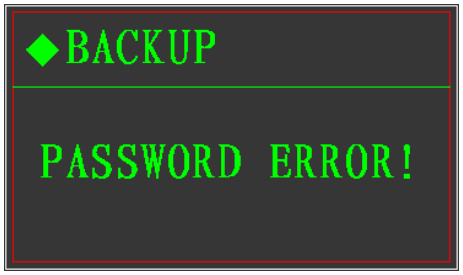
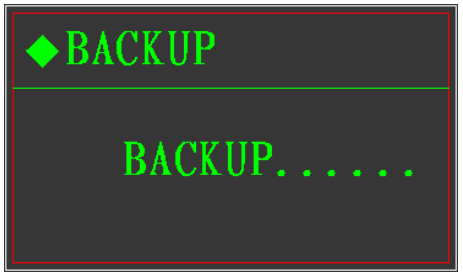
| | |
|---|---|
|  | Choose √ to enter test menu |
|  | Input test interface |

*Output interface test*

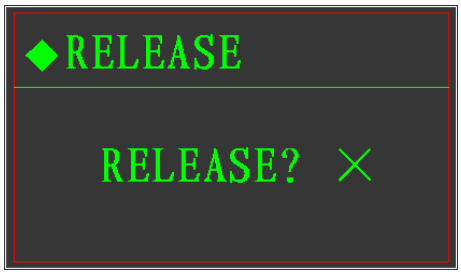
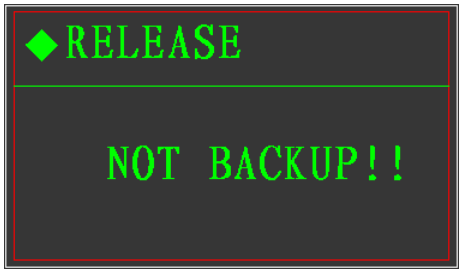
| | |
|---|---|
|  | Choose √ to enter test menu |

| | |
|---|---|
|  | Output test interface |

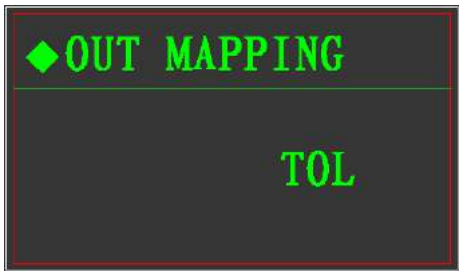
*Backup parameters*

| | |
|---|---|
|  | Choose √ to backup parameters |
|  | Input the password |
|  | Password wrong |
|  | Backup |

*Retrieve the backup parameters*

| | |
|---|---|
|  | Choose √ to retrieve the backup parameters |
|  | Indicates that there is no backup parameters |
|  | Retrieving… |

*Alternate output mapping*

| | |
|---|---|
|  | Choices:<br>Tolerance output, fast feeding output, fine feeding output, discharging output.<br>If the original output interface broken or with problem, you can mapping that interface to this alternate one by changing the cables.<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |

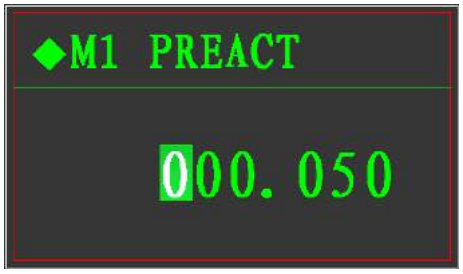
**9.5 Recipes Parameters set**

| | |
|---|---|
| *Basic + 4 materials type* | Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous |

| | |
|---|---|
|  | step. |
| *IO + 4 materials type*<br>  <br>  | Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |
| *Basic + 1 material weight losing*<br>  | Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |
| | |
| *Basic + setpoints*<br>  <br>  | Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |

*M1 recipe set*

| | |
|---|---|
|  | Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |
|  | Target weight:<br>The final weight filled in the tank/container, etc.<br>Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |
|  | Fine weight:<br>The relative weight between TARGET and FAST (when it finish the fast filling and change to fine filling), it's the relative value but not actual value.<br>Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |

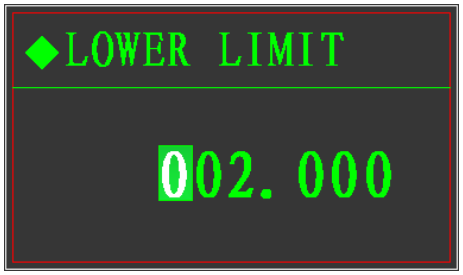
| | |
|---|---|
|  | PREACT: Decide the weight of end of the fine feeding (TARGET — PREACT).<br>Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |

*M2、M3、M4 recipes the same as M1*

*Recipe numbers set*

| | |
|---|---|
|  | One number can preset of 3 recipes<br>If a new recipe, you need to set the recipe number, if it's the recipe already in the indicator, you can modify it directly.<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return.<br>Press ZERO key to cancel and return. |

*Upper and lower weight limitations*

| | |
|---|---|
|  <br>  | It needed to be set when it using for losing weight filling<br>Lower limitation: the minimum remaining after the end of discharging.<br>Upper limitation: the approximated maximum weight it can reach.<br><br>During feeding, if the weight <(target + lower limitation), the indicator will open the supplement feeding valve until the weight reach to upper limitation and then start to discharge.<br><br>Note: If the target weight < (Upper limitation - Lower limitation), every start will end after once time discharge. |

| | |
|---|---|
| | If the target weight > (Upper limitation – Lower limitation), it will discharge more times until it reach to the target value.<br>Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |

*Setpoint 1*

| | |
|---|---|
|  | Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |

*Setpoint 2 and setpoint 3 the same as above set.*

*Preaction 1 set*

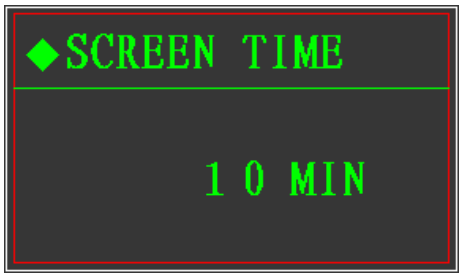
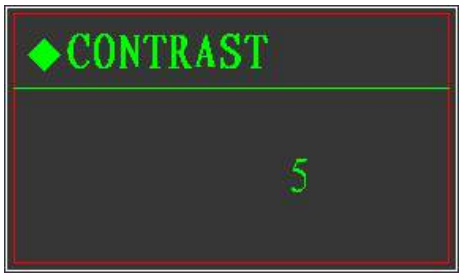
| | |
|---|---|
|  | Press SELECT key to move cursor.<br>Press TARE key to modify the chosen digits.<br>Press ENTER key to save and return to previous step.<br>Press ZERO key to cancel and return to previous step. |

*Preaction 2 and preaction 3 the same set as above*

### 9.6 Printing table format

| | |
|---|---|
|  | Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |

### 9.7 System set

| | |
|---|---|
|  | Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |
|  | Language set<br>Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |
|  | Screensaver time set<br>If it's set to be 0, the function off<br>Press SELECT key or TARE key to choose the menu to be set, press ENTER key to enter.<br>Press ZERO key to return the previous step. |
|  | Screen contrast adjust, the bigger number, the more bright the screen.<br>Press SELECT or TARE key to change<br>Press ENTER key to save change and return. |

| | |
|---|---|
| | Press ▸0◂ ZERO key to cancel and return. |

## 10. Appendix: Communication Protocol

### 10.1 Continuous transmitting format A

**Format A**

| Data format（18 bytes） | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STX | A | B | C | X | X | X | X | X | X | X | X | X | X | X | X | CR | CKS |
| I | II | | | III | | | | | | IV | | | | | | V | VI |

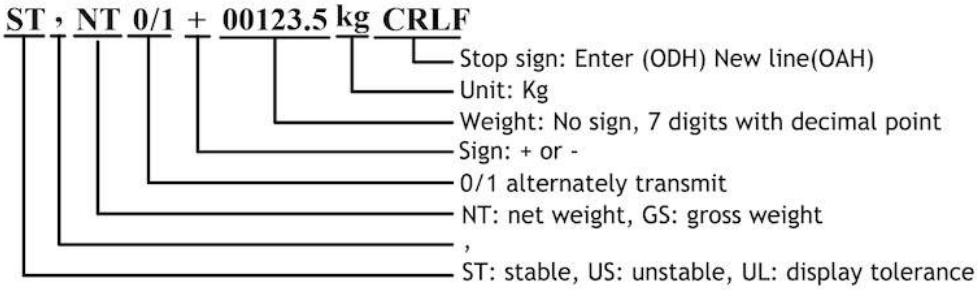
I、<STX>ASCII start sign (02H)。
II、status A、B、C, refer to below table
III、Weight value, gross weight or net weight, 6 ASCII digits without sign and decimal point.
IV、Tare value，6 ASCII digits without sign and decimal point.
V、<CR>ASCII Enter sign (ODH)。
VI、<CKS> checksum

| BIT | Status A | Status B | Status C |
|---|---|---|---|
| **Bit0** | Decimal point position:<br>001:XXXXX0<br>010:XXXXXX<br>011:XXXXX.X<br>100:XXXX.XX<br>101:XXX.XXX | 0=Current value is gross<br>1=Current value is net | 000：Stop<br>001：Material 1 feed<br>010：Material 2 feed<br>011：Material 3 feed<br>100：Material 4 feed<br>101：Discharging<br>110：Batching Suspense<br>111：Batching run |
| **Bit1** | | 0=Display value is positive<br>1=Display value is negative | |
| **Bit2** | | 0=Within display range<br>1=Out of display range | |
| **Bit3** | Fast feed output<br>0=Off 1=On | 0=Current weighing stable<br>1=Current weighing unstable | Always 0 |
| **Bit4** | Fine feed output<br>0=Off 1=On | Always 1 | 0：stand display<br>1：×10 display |
| **Bit5** | Always 1 | Always 1 | |
| **Bit6** | Always 0 | Always 0 | |
| **Bit7** | Always 0 | Always 0 | |

### 10.2 Command transmitting format A

| No. | Command sign | Note |
|---|---|---|
| 1 | “C” or “c” | Clear tare |
| 2 | “P” or “p” | Print gross tare net |
| 3 | “T” or “t” | Tare |
| 4 | “Z” or “z” | Zero |

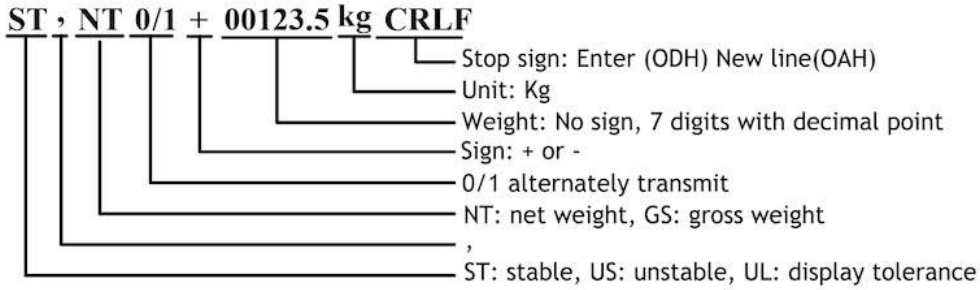
### 10.3 Continuous transmit format B




**10.4 Command output format B**

| No. | Command letter | Indicator response |
|---|---|---|
| 1 | READ+ENTER NEWLINE | Refer to <Indicator weight reading and status> |
| 2 | TARE+ ENTER NEWLINE | Refer to <Tare weight reading and status> |
| 3 | TARE ON+ ENTER NEWLINE | Tare operation<br>Works： return YES+ ENTER NEWLINE<br>No work：return NO？ + ENTER NEWLINE |
| 4 | TARE OFF+ ENTER NEWLINE | Clear tare<br>Works：return YES+ ENTER NEWLINE<br>No work：return NO？ + ENTER NEWLINE |
| 5 | ZERO ON+ ENTER NEWLINE | Zero operation<br>Works：return YES+ ENTER NEWLINE<br>No work：return NO？ + ENTER NEWLINE |
| 6 | CAL XXXXXX+ ENTER NEWLINE | XXXXXX is loading weight value, W, without decimal point<br>If W=0，zero calibration.<br>If W≠0，loading weight calibration.<br>Indicator response：<br>Zero calibration done:<br>ZERO YES+ ENTER NEWLINE<br>Zero calibration vibrate：<br>ZERO E1+ ENTER NEWLINE<br>Loading weight calibration done<br>SPAN YES+ ENTER NEWLINE<br>Loading weight calibration vibrate:<br>SPAN E1+ ENTER NEWLINE<br>Input data is too small：<br>SPAN E2+ ENTER NEWLINE<br>Input data is too big:<br>SPAN E3+ ENTER NEWLINE<br>Loading weight is too big：<br>SPAN E4+ ENTER NEWLINE |

Indicator weight reading and status, the indicator response format:




Tare weight reading and status, the indicator response:


**10.5 MODBUS output format**

MODBUS is the master-slave type network communication protocol, this indicator acts as the subordinate in the network for called by the host system, the format is RTU and support 03 and 06 functions. The parameter needs to be set as F4.1=5 and the address of Modbus to set in F4.5, the mapping address definitions as the below table:

| Address | Digits | Note (read only) |
|---|---|---|
| 40001 | | Current gross weight value |
| 40002 | | Current display weight value |
| 40003 | .0 | 1=material 1 in fast feeding |
| | .1 | 1=material 1 in fine feeding |
| | .2 | 1=scale is empty |
| | .3 | 1=reach to setpoint 1 （setpoint type） |
| | .4 | 1=material 2 in fast feeding |
| | .5 | 1=material 2 in fine feeding |
| | .6 | 1=reach to setpoint 2 （setpoint type） |
| | .7 | 1=reach to setpoint 3 （setpoint type） |
| | .8 | 1=material 3 in fast feeding |
| | .9 | 1=material 3 in fine feeding |
| | .10 | 1=supplement feeding (single material losing weight mode) |
| | .11 | 1=Indicator above tolerance or lower than tolerance |
| | .12 | 1=material 4 in fast feeding |
| | .13 | 1=material 4 in fine feeding |
| 40004 | .0 | 01～11：current recipe numbers（1～3） |
| | .1 | |
| | .2 | |
| | .3 | |
| | .4 | 1=batching run |
| | .5 | 1=batching suspense |
| | .6 | 1=discharging |
| | .7 | 1=feeding finish, waiting for discharging |
| | .8 | 0000=0.001；0011=0.01；0110=0.1；1001=1； |
| | .9 | |

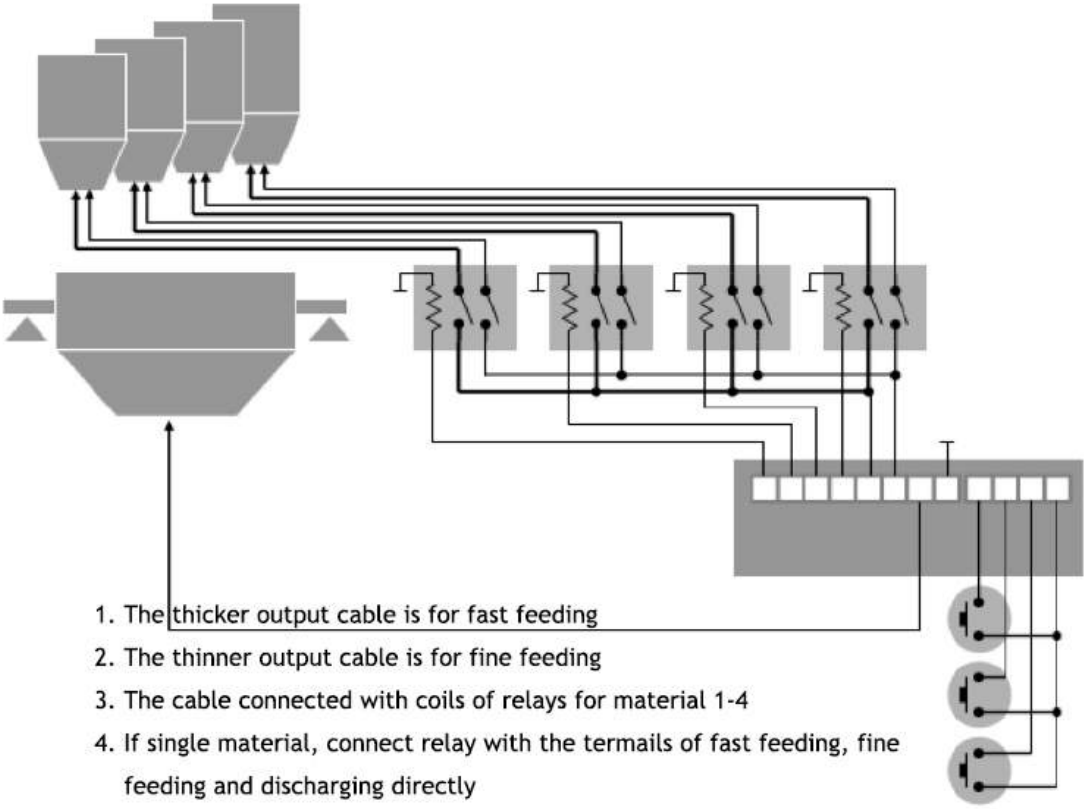
| | | |
|---|---|---|
| | .10 | 0001=0.002；0100=0.02；0111=0.2；1010=2； |
| | .11 | 0010=0.005；0101=0.05；1000=0.5；1011=5；<br>1100=10；1101=20；1110=50；<br>current division. |
| | .12 | 1=batching tolerance |
| | .13 | 1=scale vibrate |
| | .14 | 1=manual feeding mode |
| | .15 | 1=manual discharging mode |
| 40005 | | 1～4 material batching mode: actual batched weight of current material 1.<br>Single material losing weight mode: the current batched value of this filling.<br>(the batching value kept till start of next cycle). |
| 40006 | | 1～4 material batching mode: actual batched weight of current material 2.<br>Single material losing weight mode: the current accumulated value of this filling.<br>(the batching value kept till start of next cycle). |
| 40007 | | actual batched weight of current material 3. (the batching value kept till start of next cycle). |
| 40008 | | actual batched weight of current material 4. (the batching value kept till start of next cycle). |

| Address | Mapping（read and write） |
|---|---|
| 40009 | Tare value |
| 40010 | Target value of material 1 |
| 40011 | Target value of material 2 |
| 40012 | Target value of material 3 |
| 40013 | Target value of material 4 |
| 40014 | Fast feeding value of material 1 |
| 40015 | Fast feeding value of material 2 |
| 40016 | Fast feeding value of material 3 |
| 40017 | Fast feeding value of material 4 |
| 40018 | Preaction quantity of material 1 |
| 40019 | Preaction quantity of material 2 |
| 40020 | Preaction quantity of material 3 |
| 40021 | Preaction quantity of material 4 |
| 40022 | Range of empty scale |
| 40023 | Preaction adjust frequency |
| 40024 | Start delay time |
| 40025 | Discharge delay time |
| 40026 | Forbid comparing time |
| 40027 | Delay check time of material 1 |
| 40028 | Delay check time of material 2 |
| 40029 | Delay check time of material 3 |
| 40030 | Delay check time of material 4 |
| 40031 | Lower tank weight |
| 40032 | Upper tank weight |
| 40033 | Weight value of setpoint 1 |
| 40034 | Weight value of setpoint 2 |
| 40035 | Weight value of setpoint 3 |
| 40036 | Preaction quantity of setpoint 1 |
| 40037 | Preaction quantity of setpoint 2 |
| 40038 | Preaction quantity of setpoint 3 |
| 40039 | Quantity used of material 1 (higher digits) |
| 40040 | Quantity used of material 1 (lower digits) |
| 40041 | Quantity used of material 2 (higher digits) |
| 40042 | Quantity used of material 2 (lower digits) |
| 40043 | Quantity used of material 3 (higher digits) |
| 40044 | Quantity used of material 3 (lower digits) |
| 40045 | Quantity used of material 4 (higher digits) |
| 40046 | Quantity used of material 4 (lower digits) |

| | | |
|---|---|---|
| 40047 | 0 | 1=Zero calibration done |
| | 1 | 1=Loading weight calibration done |
| | 2 | 1=Writing value less than 1% during loading weight calibration |
| | 3 | 1=Writing value more than full scale during loading weight calibration |
| | 4 | 1=Loading weight is not enough during loading weight calibration |
| | 5 | 1=running, calibration not allowed |
| 40048 | | Floating number of current weight |
| 40049 | | |
| | | |
| Address | | Mapping（Write only） |
| 40101 | .0 | 0001～0100：appoint the material number to be operated |
| | .1 | |
| | .2 | |
| | .3 | |
| | .4 | Start manual feeding, material bits 0-3 given：<br>（Eg: If 0001: material 1 batching,<br>If 0010: material 2 batching,<br>If 0011: material 3 batching,<br>If 0100: material 4 batching) |
| | .5 | / |
| | .6 | / |
| | .7 | / |
| | .8 | Start auto feeding |
| | .9 | Suspend batching or discharging |
| | .10 | Stop emergency |
| | .11 | Start discharge（after feeding end and discharging type is manual） |
| | .12 | Tare（not batching, not vibrate and tare allowed） |
| | .13 | Clear tare（not batching, not vibrate and tare allowed） |
| | .14 | Zero（not batching, not vibrate） |
| | .15 | Continue batching or discharging |
| 40102 | .0 | 0001～0011：Choose working recipe number |
| | .1 | |
| | .2 | |
| | .3 | |
| | .4 | 10：Chose manual batching during all cycles. |
| | .5 | 11：Chose auto batching during all cycles. |
| | .6 | 10：Chose manual discharging during all cycles. |
| | .7 | 11：Chose auto discharging during all cycles. |
| 40103 | | Scale calibration：<br>0：Zero calibration<br>XXXXX：loading weight calibration（XXXXX is the value of the loading weight） |

### 10.6 Multi materials jointed work with relay connected

The below chart is for connecting of 4 materials batching, the input and output can be connected as common source or common grounded, for single material, connect the three relay to the connecting terminals of fast feeding, fine feeding and discharging.



1. The thicker output cable is for fast feeding
2. The thinner output cable is for fine feeding
3. The cable connected with coils of relays for material 1-4
4. If single material, connect relay with the termails of fast feeding, fine feeding and discharging directly

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# User Manual

# Y320

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