sisco

# Grain moisture analyzer

## Instructions for use

Fast, accurate and convenient

Both AC-DC power supply

LCD with white backlight, clear and bright

Multi-point calibration, error correction

Low power consumption, automatic power off, energy saving, energy-saving

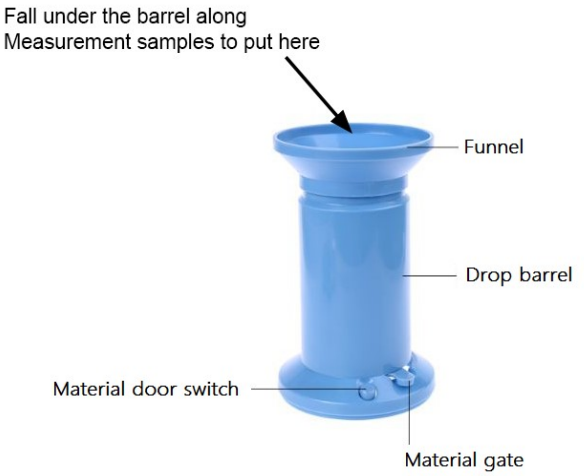
Automatic weighing and temperature compensation

Translated density display, moisture mean value calculation

# Ⅰ. Notice before using

1. Open the package and find material flow cup, funnel, cleaning brush, 200g weight and battery in it.
2. Main parts moisture measurer :


Note: The color of the instrument and accessories shall be subject to the specific color received.




3. Main function:

a. It can weigh material automatically.

b. It can be powered off automatically.

c. It can adjust temperature automatically.

d. It can measure moisture automatically.

e. It can correct moisture when empty.

f . It has most advanced revising mode.

g. The user can decide material kind and revise moisture error.

4. The battery box is embedded in the moisture meter, making it very convenient to use. If not used for a long time, please remove the battery.

## Ⅱ. Preparations before measuring

1. Take out the foam around measuring sensor.

2. Take off the handle (battery box) and put 4pcs of batteries in it according to + and - of batteries. Then press the batteries and inlay the battery box in the measurer , or plug in random distribution of the AC power adapter AC power supply(220v ± 10% 50Hz).

3. Insert the funnel into material flow cup.

4. Put the measurer on a steady horizontal table.

5.Prepare the measurement sample and use a bulk density sampler to sample and place it in the drop bucket.

6. Select the code for the variety to be measured (you can find it on the last page of this manual).

## Ⅲ Electronic balance calibration

Transportation and certain unexpected factors may cause the built-in electronic balance of the instrument to lose accuracy or be locked by the program. It is recommended that users perform a "balance calibration" operation before use.

**Operation method:**

1 Turn off the instrument, empty all items inside the sensor, and keep them horizontal. First, hold down key“ species ”and then press key “ on/off ”again. The instrument displays the words' Adjust 'and' weight ', indicating that it has entered the balance calibration state.

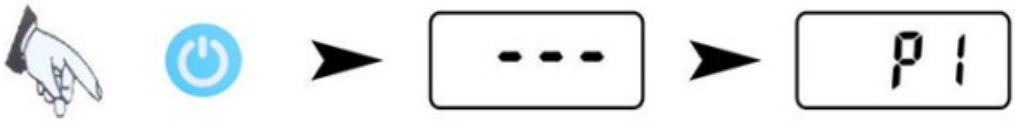
2 The instrument displays 000g and automatically performs zero calibration (wait for about 3 seconds . After zero calibration is completed, the instrument flashes 200g and prompts to place a 200g standard weight.

3 Gently place the 200g standard weight attached to the instrument with a hole on the top of the sensor in the center of the "measuring cylinder". When the instrument detects the weight, it stops flashing and displays 200g as a constant light. After

calibration is completed, the instrument will flash 3 times and then automatically shut down. Remove the weight to complete the balance calibration operation.

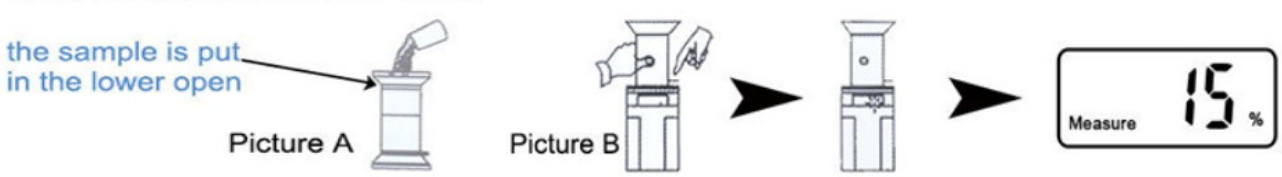
## IV. Moisture measuring

1. Press “ on/off ” button, and the instrument will start self checking. After passing, the product code will be displayed.




2. Press “ ▲ ”or “ ▼ ”key to choose the material code of material you want to measure.


3. Put the material into material flow cup and make the height of material at lower edge of funnel（As shown in Picture A）.




4. Place the material flow cup on the measuring sensor, hold it with left hand and press “ Material gate ” button on material flow cup with right hand to make the material flow from exit of material flow cup and fall into measuring sensor（As shown in Picture B）. The moisture will be displayed after radix point glitters for several times (No need to press any key or take the material flow cup away ).

5. When the moisture is displayed: if press " ▲ " key for once, weight of measured material will be displayed and if press “ species ” key at this moment,temperature of measured material will be displayed.Press the “ ▼ ” key, then display the bulk density value of wheat, in grams / liter (g/L). If press “ Enter ” key again at this moment, the moisture will be displayed again.

6. Volume adjustment (voice version includes this function）

There are 3 levels of volume, which are 0. 1 . 2, 0 represents mute, and 1 and 2 are increased in sequence.

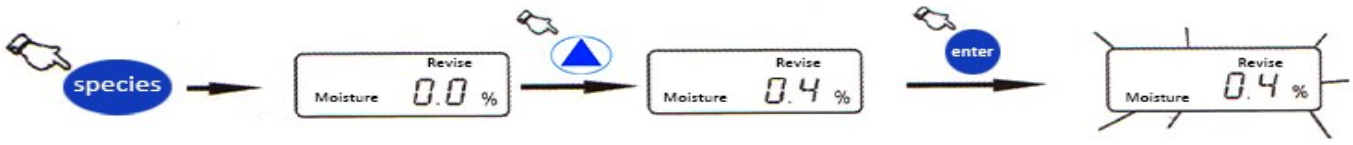
Adjustment method：Press and hold the" ▲ "key without letting go, and then press the“ on/off ”key power button. The machine will broadcast the voice numbers. Press

the " ▲ " key and " ▼ " key adjust the volume. Press the" Enter " key to complete.

## V.Error correction

Due to objective reasons such as regional and variety differences, the measurement parameters pre-calibrated when the instrument leaves the factory have limitations, and there may be certain errors during measurement, and the moisture value can be corrected according to the following methods to improve the measurement accuracy.

1. Determine the correction value: Generally, the moisture value measured by the 105℃, standard oven method is the standard value, and the measured value is subtracted, and the result is the correction value (including positive and negative values). For example, if the measured moisture value is 13.6%, and the actual moisture value that needs to be displayed is 14.0%, the corrected value is +0.4, which means that it should be adjusted up by 0.4. If the resulting correction value is negative, it needs to be lowered.
2. Correction: Pour out the sample in the instrument, press and hold the " species " key until you hear the beep and release, the word "Revise" flashes on the display, and at the same time display the original set error correction value (the factory setting correction value is 0.0), press the " ▲ "or " ▼ " key to adjust the correction value, press the " Enter "key to save, the instrument flashes to show shutdown or press the variety key " species " to exit the correction state.




## VI. Calibration

Calibration refers to the new setting of instrument measurement parameters using samples with known standard moisture content, and its function is to increase the measurement variety, or to accurately correct the measurement error of the existing variety ( When the instrument is used in trade, safe storage and other occasions with high requirements for measurement accuracy, the company requires the user to use the standard sample of the measured variety to calibrate and correct the error under conditions to ensure that the measurement accuracy protects the interests of all parties. )

The instrument can be calibrated with up to 4 standard samples, and the calibration steps are as follows:

1. Precautions:

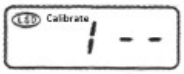
a. Please empty all items in the sensor before the calibration operation.

b. Calibration must be performed in sequence from low to high moisture values.

c. Do not turn off the power during the calibration process.

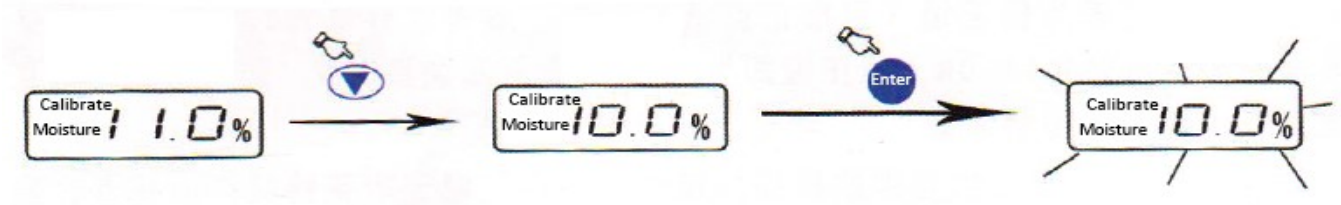
2. Preparation of standard samples: Standard samples were prepared by the 105℃ standard oven method. In order to ensure the represent initiative and accuracy of the calibration, the highest and lowest moisture values of the standard samples should be at the two ends of the actual measurement range, and the difference between the samples should be 3-6 percentage points. If the measured moisture range does not exceed 6 percentage points, only three standard samples of low, medium and high or two standard samples of low and high are sufficient. (Example: Paddy, the standard moisture is divided into low, middle 1, middle 2 and high moisture, respectively 10%, 14%, 17%, 20%).

3. Selected variety code: press the " ▲ "or " ▼ " key to Select the variety code to be calibrated.

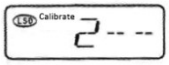
4. Enter the calibration state:Hold the key " Enter " (about 5-6 seconds), release it after hearing the beep, and display 

,Indicates that the instrument has entered the calibration state, prompting the first standard sample to be inserted.

5. Calibrate low moisture: take a low moisture standard sample and put it into the sensor, wait for the measurement result to be displayed, and press the" ▲ " or " ▼ " key to modify the displayed value to the standard value.Press the button " Enter " again to save the modification result.The instrument flashes "Standard value " , indicating that a point calibration is complete.




**Tip: One-point calibration can also be used as a method of error correction. At this time, if you shut down and exit, it is equivalent to completing the error correction.**

6. The second point of calibration: empty the low moisture standard sample, the instrument will display 

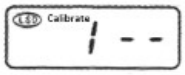
, Prompt to put in the standard sample with the second lowest moisture (for example: No. 1 in the middle, moisture value 14%), and operate according to steps 5 to complete the calibration of the first point.

7. Continue calibration: continue calibration, when the calibration of the 4th standard sample is completed, the instrument will automatically exit the calibration state; If

there is no 3rd or 4th standard sample,You can directly exit the calibration state by pressing the " on/off " key or " species " key.

8. Retest standard sample: retest standard sample, if the measurement error < 0.5% , it means that the calibration is successful, if the error is too large, it needs to be recalibrated

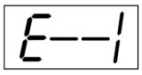
## VII. reset

9. If the user wants to restore the default calibration data of the instrument factory settings, he can do the following: select the symbol code to be restored, hold down the " Enter " key,Release it when you hear the beep, and then press and hold the " species " key until you hear the beep, and the instrument will flash and display 

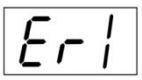
, Indicates that the default parameters have been restored, successfully shut down and exit the recovery state.

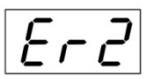
## VIII. Status indication

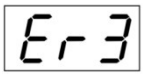
The instrument has a power-on self-test function, and the corresponding prompt symbols will be displayed according to different states, as shown below

★ 

:Indicates that the moisture sensor is faulty or contains a sample, which should be emptied or serviced.

★ 





:Indicates that the water measurement, temperature measurement and weighing circuits are faulty.

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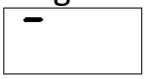
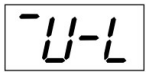
:Indicates that the moisture difference between standard samples at the time of calibration is less than one percent.

★ 

: Indicates that the moisture value of the standard sample is wrong in the order of low and high during calibration.

★ A blinking battery symbol appears in the upper left corner  : Indicates that the battery voltage is low and needs to be replaced.

★ Both the battery symbol  and 

appear to indicate that the battery has been exhausted and needs to be replaced immediately.

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:means that the weighing self-calibration failed, the instrument is not calibrated, follow the following steps: "IV-2 Correction" to operate and overhaul;

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:Indicates that the number of samples measured is too small.

★ Charging indicator lamp： A red light indicates charging, while a green light

indicates full charge.

## IX. Technical Parameter

Measuring Object: Grain and other non-metallic granular samples
Measuring Moisture Range: 3-35%
Repeating Error: ≤0.2%
Measuring Error: ≤±0.5%
Measuring Time: <10 seconds
Power supply:

1-1 5# battery with 4 batteries

1-2 Charging model with built-in 3.7V lithium battery (optional functions)

Automatic power outage: If the measurement stops for more than 3 minutes, it will automatically shut down.
Working Environment Temperature: 0-40℃
Temperature Adjusting: Automatically
Net Weight: 830g

## X.Material kind form:

| Material Kind | code | Material Kind | code | Material Kind | code |
|---|---|---|---|---|---|
| Rapeseed | P1 | Long paddy | P13 | Vegetables sediment | P25 |
| Wheat | P2 | Glutinous paddy | P14 | Coffee beans | P26 |
| Barley | P3 | Rice | P15 | Coffee Rice | P27 |
| Peas | P4 | Buckwheat | P16 | Cocoa beans | P28 |
| Green beans | P5 | Soybean | P17 | Granulated feed | P29 |
| White oats | P6 | Corn | P18 | Sunflower seeds | P30 |
| Flax seed | P7 | Radish seeds | P19 | Pine nuts | P31 |
| Black rice | P8 | Peanuts | P20 | white melon seeds | P32 |
| Millet | P9 | Sesame | P21 | large grain corn | P33 |
| Red wheat | P10 | Watermelon seed | P22 | Custom test varieties | P34 |
| Sorghum | P11 | Cottonseed | P23 | Custom test varieties | P35 |
| Round paddy | P12 | Soybean meal | P24 | | |