# Digital refractometer manual

## 1. Overview

The digital refractometer is a digital high-precision optical instrument designed by the principle of refraction. It is small and beautiful, easy to use, and LCD large-screen LCD digital display. As long as a drop of sample solution is placed on the prism, the measured value will be displayed within 3 seconds, which avoids the subjective error numerical interpretation. Professionally measure the sugar content of water samples, food, fruits and crops, widely used in food industry, beverage industry, agriculture, agricultural food processing industry, etc.

Note: This instrument is produced in strict accordance with the requirements of ISO9001-2008 quality management system, and has been strictly tested and corrected before leaving the factory to meet the requirements of the specifications.

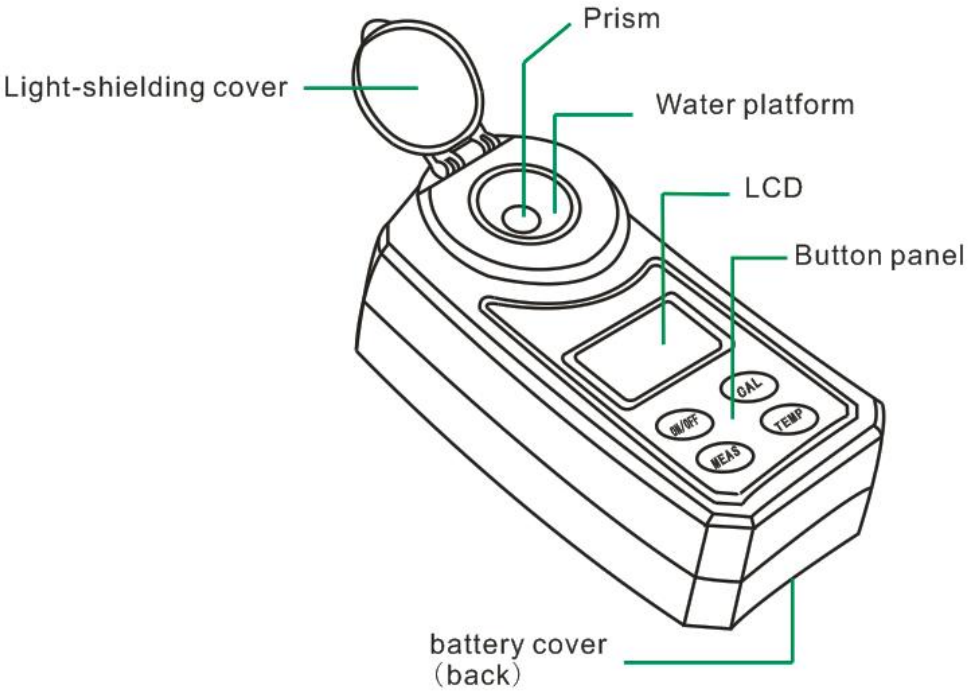
## 2. Features

2.1 Automatic temperature compensation.
2.2 Battery powered, low power consumption, 2 minutes no operation, automatic shutdown function.
2.3 Refractive index / sugar conversion.
2.4 No moving parts, high sensitivity and wide dynamic linear range.
2.5 The sample and reagents are used in small amounts and the analysis speed is fast.

## 3. Product specifications

| project | Technical scope |
|---|---|
| Measuring range | 0.0-55% Brix |
| Graduation value | 0.1Brix/0.1℃ |
| Precision | ±0.2Brix/1℃ |
| Use environment | 10-80℃ |
| Sample volume | ≥0.2ml(3-5) drop |
| measure time | ≈3S |
| power supply | 2 AAA alkaline batteries |
| Battery Life | ≈2000 measures |

## 4. Appearance

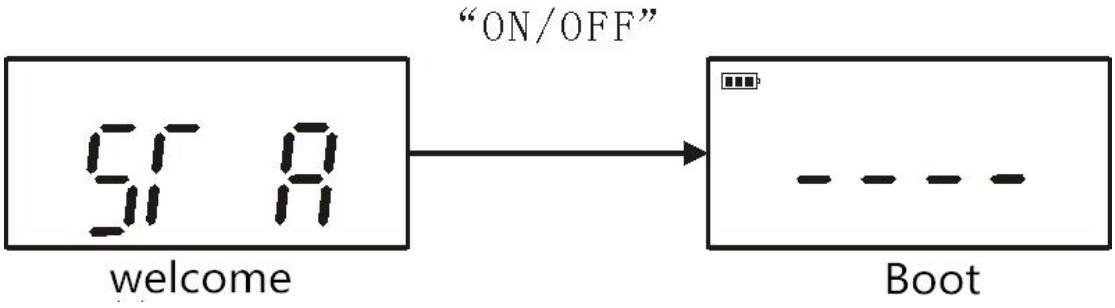



ON/OFF：On/off　　CAL：Zero calibration
MEAS：Measurement / long press mode switching
TEMP：Temperature measurement

## 5. Instructions for use

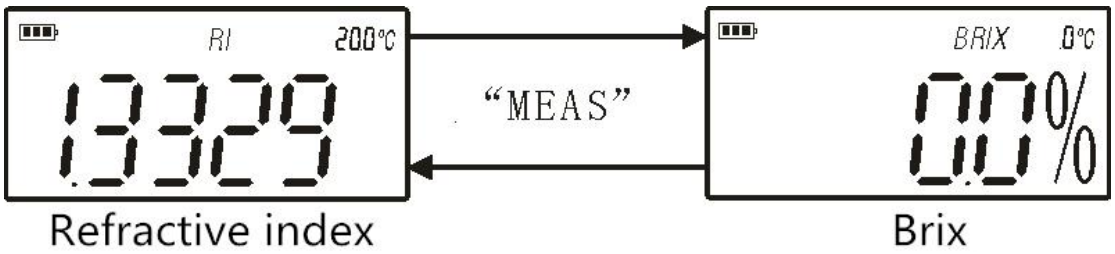
5.1 Boot display

Press the “ON/OFF” button to turn on the instrument. If the battery is insufficient after power on, it will automatically shut down. After replacing the battery, it can be used normally.




5.2 Mode switching

In the power-on state, long press the “MEAS” button to switch the measurement mode (sugar BRIX – refractive index RI).




5.3 Instrument measurement / pre-test instructions

5.3.1 The instrument should be operated at normal temperature. Before the measurement, the instrument and the liquid to be tested should be placed at the same temperature (the temperature should not exceed 2 °C), otherwise the test accuracy will be affected.

5.3.2 The liquid to be tested should be shaken evenly during the test.

5.3.3 This instrument must not be operated under strong light.

5.3.4 Zero calibration should be performed before measurement.

5.3.5 Check the battery level before measuring. The low battery voltage will affect the test results.

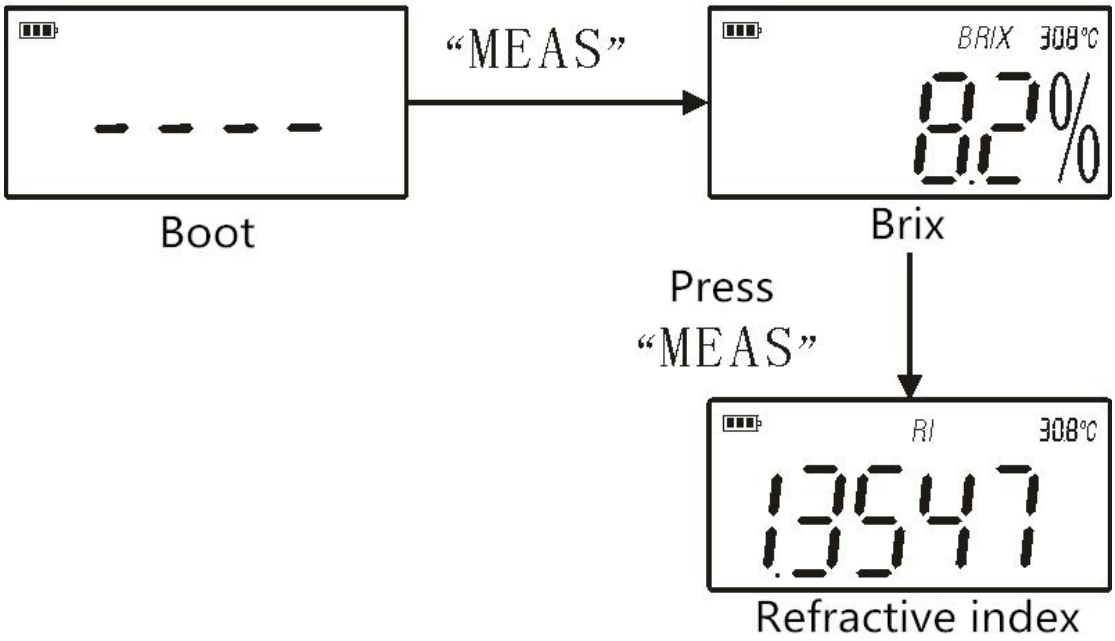
5.4 measuring

Step 1: When measuring, the prism hole should be dripped with pure water and wiped clean with a soft cloth.

Step 2: Add 3~5 drops of solution to the prism hole.

Step 3: Cover with blackout cover.

Step 4: Press the "MEAS" button to display the value as test data.




5.5 Zero calibration

5.5.1 Drip the prism hole into pure water, wash it several times, and dry it with a soft cloth.

5.5.2 Drip pure water to the prism hole.

5.5.3 Press and hold the "CAL" button until the "DONE" calibration on the screen is successful, otherwise "ER05" appears.

5.6 Notes

5.6.1 Zero calibration ensures pure water is clean.

5.6.2 Make sure the prism surface is clean before each measurement.

5.6.3 The instrument should be placed at a normal temperature to avoid exposure to high temperatures and sunlight for a long time to prevent errors and LCD failure.

5.6.4 Do not wash the instrument directly under water to avoid internal water ingress and damage internal parts.

5.6.5 Handle with care to avoid scratching or touching the prism surface.

5.6.6 In order to avoid the test accuracy of the test object due to evaporation, sampling and operation are completed in a short time.

5.6.7 If the battery is too low, it will cause errors in the measurement data. Please replace the battery in time.

## 6. Error code/help

| display | Interpretation | Exclusion measures |
|---|---|---|
| ER01 | Optical sensing anomaly | Return to factory maintenance |
| ER02 | Temperature sensing abnormality | Return to factory maintenance |
| ER03 | The measured value is too low | Confirm that the measurement solution is normal |
| ER04 | The measured value is too high | Dilution measurement solution |
| ER05 | Zero solution is not normal | Confirm that the calibration solution is normal |

## 7. Accessories

| NO. | Product description | Quantity |
|---|---|---|
| 1 | Digital refractometer | 1 |
| 2 | AAA alkaline battery | 2 |
| 3 | Instruction manual | 1 |
| 4 | Glasses cloth | 2 |
| 5 | Waterproof rubber mat | 1 |
| 6 | Phillips screwdriver | 1 |
| 7 | dropper | 2 |
| 8 | Cross recessed pan head tapping screw M1.9*5 | 4 |