

## Smart Sensor AR991

# Smart Sensor AR991 Grain Moisture Meter User Manual

Model: AR991

## 1. INTRODUCTION

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The Smart Sensor AR991 Grain Moisture Meter is a precision instrument designed for accurately measuring the moisture content of various grains. It features a double sensor for high accuracy, an LCD backlight for visibility in dark environments, and a voice alarm function. This manual provides essential information for the safe and effective use of your device.



Figure 1: Smart Sensor AR991 Grain Moisture Meter in use.

## 2. PRODUCT OVERVIEW

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### 2.1 Key Features

- **Measuring Range:** Moisture 7.5% to 50%.
- **High Accuracy:** Double sensor design ensures precise measurements.
- **LCD Backlight:** Enables easy reading in low-light conditions.
- **Voice Alarm:** Provides audible notifications and alarms.
- **Auto Power-off:** Automatically shuts down after 15 minutes of inactivity to conserve battery life.
- **Grain Type Selection:** Supports 14 types of grains.
- **Data Hold:** Freezes the displayed reading for convenience.
- **Deviation Adjustment:** Allows for calibration adjustments.
- **Memory Function:** Retains settings even after battery removal.



Figure 2: Key features of the AR991 Grain Moisture Meter.

## 2.2 Components

- Main Unit with LCD Display
- Metal Probes (Double Sensor)
- Probe Protection Cap
- Handle
- Control Buttons (Adjust, Limit, ON/OFF, Varieties, Voice)
- Batteries (Included)



Figure 3: Labeled diagram of the AR991 components.

### 3. SETUP

1. **Install Batteries:** Open the battery compartment and insert the included batteries, ensuring correct polarity.
2. **Remove Probe Protection Cap:** Carefully remove the protective cap from the metal probes before use.

### 4. OPERATING INSTRUCTIONS

#### 4.1 Power On/Off

- **To Power On:** Press and hold the **ON/OFF** button for approximately 2 seconds until the display shows "ON", then release.
- **To Power Off:** Press and hold the **ON/OFF** button for approximately 2 seconds until the display shows "OFF", then release.

#### 4.2 Selecting Grain Type

The meter supports 14 different grain types (P0-P13). To select the appropriate grain type:

- Press the **Varieties** button to cycle through the grain types (P0 to P13).
- Long press the **Varieties** button for 3 seconds to restore the default P0 mode.

#### 4.3 Taking a Measurement

1. Ensure the correct grain type is selected.
2. Carefully insert the metal probes into the grain sample. Ensure the probes are fully immersed and stable.
3. The moisture content will be displayed on the LCD screen.



## 4.4 Voice Selection

The meter offers four voice modes:

- **d1**: Water content announcement.
- **d2**: High water content announcement.
- **d3**: Silent mode.
- **d4**: "Didi" sound notification.

Press the **Voice** button to switch between these modes. Long press for 3 seconds to restore d1 mode.



Figure 4: The meter's speaker for voice announcements.

## 4.5 Deviation Adjustment

To adjust the measurement deviation:

- Press the **Adjust** button. Each press increases the value by 0.5%. The adjustment range is -3% to +5%.
- Long press the **Adjust** button for 3 seconds to reset the deviation to 0%.

## 4.6 Alarm Setting (Limit Key)

The **Limit** button is used to set a voice prompt value for moisture content. The default setting is 10%.

- The alarm setting range is 10% to 40%.
- Press the **Limit** button to adjust the alarm threshold.
- Long press the **Limit** button for 2 seconds to restore the default 10% set value.

## 5. MAINTENANCE

- **Cleaning**: After each use, gently wipe the metal probes with a clean, dry cloth to remove any grain residue. Do not use abrasive cleaners or immerse the device in liquids.
- **Storage**: Always replace the probe protection cap when the meter is not in use to prevent damage to

the probes. Store the device in a cool, dry place, away from direct sunlight and extreme temperatures.

- **Battery Replacement:** When the low battery indicator appears on the LCD, replace the batteries promptly to ensure accurate readings. The memory function ensures your settings are retained even during battery changes.

## 6. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on	Dead or incorrectly installed batteries	Check battery polarity or replace with new batteries.
Inaccurate readings	Incorrect grain type selected Probes not fully inserted Deviation setting incorrect	Verify grain type selection. Ensure probes are fully immersed. Use the <b>Adjust</b> button to correct deviation or reset to 0%.
Low battery indicator	Batteries are low	Replace batteries.
No voice announcement	Silent mode (d3) selected	Press the <b>Voice</b> button to switch to d1 or d2 mode.

## 7. SPECIFICATIONS

- **Model:** AR991
- **Measuring Range:** 7.5% - 50% Moisture
- **Accuracy:** 0.1% / 0.1
- **Measurement Principle:** Resistance Method
- **Display:** LCD with Backlight
- **Auto Power-off:** 15 minutes of no operation
- **Supported Grain Types:** 14 (Rapeseed, Sesame, Soybean Meal, Cotton, Soybean, Peanut, Barley, Rice, Sorghum, Watermelon Seed, Paddy, Wheat, Maize, Fodder, Jute)
- **Item Weight:** 410 g
- **Product Dimensions (LxWxH):** 43 x 80 x 425 mm
- **Included Components:** Batteries



Figure 5: Dimensions of the AR991 Grain Moisture Meter.

## 8. WARRANTY AND SUPPORT

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For technical support or warranty inquiries, please contact the importer:

**EEE Instruments Inc.**

32A Ganesh Chandra Avenue, 4th Floor

Kolkata 700013, India

Email: [info@tech-3e.com](mailto:info@tech-3e.com)

Please refer to your purchase documentation for specific warranty terms and conditions.