DAOKAI WE-DA-032

HX711 Weight Sensor ADC Module Kit with 5KG Load Cell and Scale Display Module

Brand: DAOKAI | Model: WE-DA-032

1. Introduction

This instruction manual provides detailed guidance for the assembly, connection, calibration, and operation of the DAOKAI HX711 Weight Sensor ADC Module Kit. This kit is designed for high-precision weight measurement applications, featuring a 5KG load cell and an HX711 24-bit A/D converter module, along with a dedicated scale display module.

2. What's in the Box

Please verify that all the following components are included in your package:

- 1 x Weight Sensor 5KG
- 1 x HX711 24BIT Precision AD Module
- 5 x Nylon Guide Columns
- 2 x Acrylic Discs
- 2 x M3x10 Screws
- 1 x 4PIN Female-Female Dupont Cables
- 1 x 3.5mm x 1.35mm Power Cable
- 1 x Scale Display Module

3. Product Overview

3.1 HX711 Module Features

- 24-bit A/D converter chip for high-precision load cells.
- Two analog channel inputs.
- Internal integrated 128 times gain programmable amplifier.
- Operating voltage range: 2.6V to 5.5V.

- Operating temperature range: -20°C to +85°C.
- Selectable output data rate of 10Hz or 80Hz.
- Simultaneously suppresses 50Hz and 60Hz power interference.
- On-chip active low noise PGA with selectable gain of 64 and 128.
- On-chip power supply regulator for load-cell and ADC analog power supply.
- On-chip oscillator requiring no external component with optional external crystal.
- On-chip power-on-reset.
- Simple digital control and serial interface: pin-driven controls, no programming needed.
- Current consumption including on-chip analog power supply regulator: normal operation < 1.5mA, power down < 1uA.

Figure 1: HX711 Module Dimensions. This image displays the HX711 24BIT Precision AD Module, highlighting its compact size of 34mm x 20mm (1.34in x 0.79in) and pinout for connections.

3.2 5KG Load Cell Features

- 4 leads for easy connection.
- Requires 5-10V driving voltage.
- Directly outputs a voltage signal proportional to force changes.

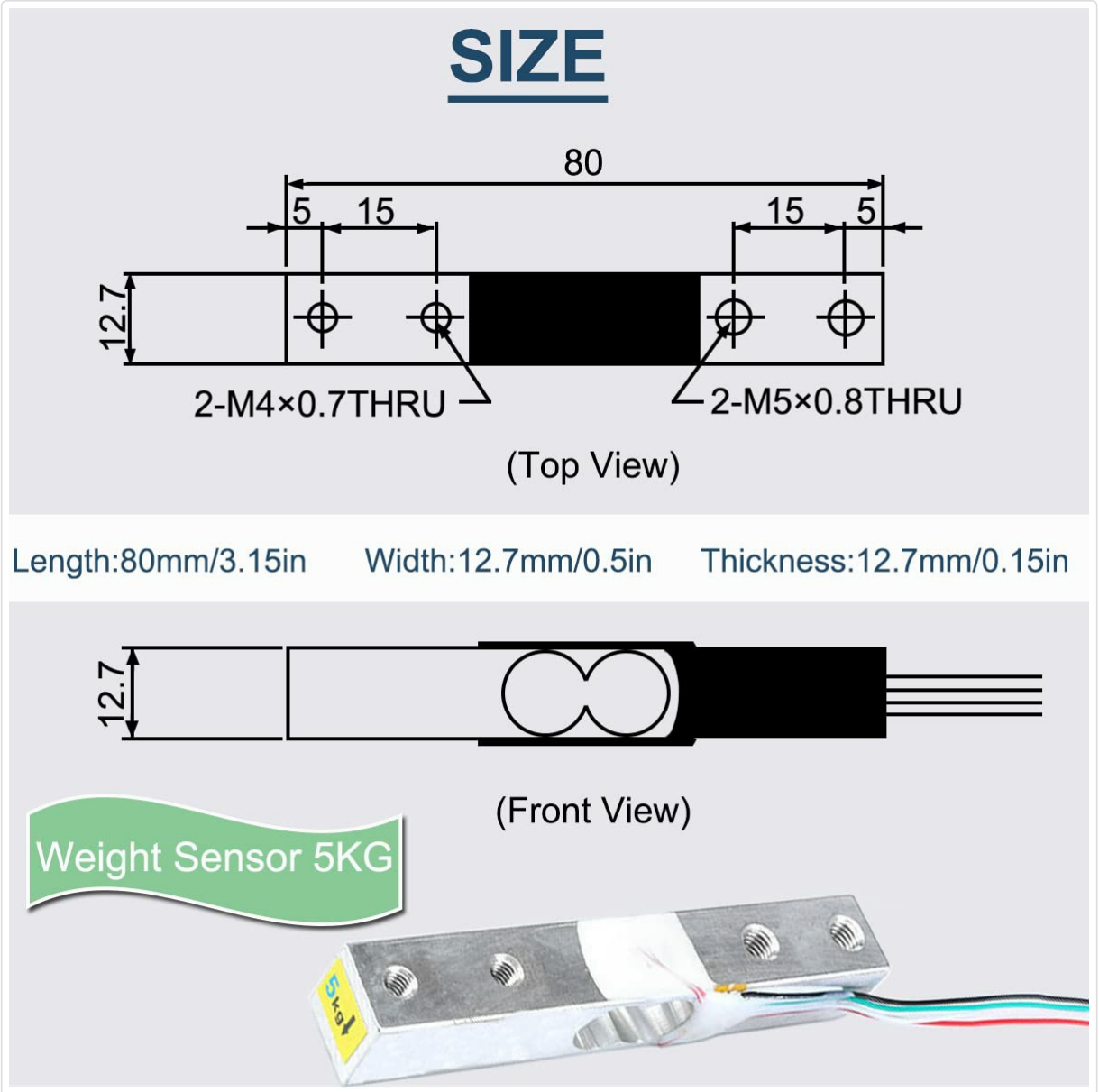

Figure 2: 5KG Load Cell Dimensions. This image provides a top and front view of the 5KG Load Cell, showing its length of 80mm (3.15in), width of 12.7mm (0.5in), and thickness of 12.7mm (0.15in), along with screw hole specifications.

4. Setup and Assembly

4.1 Physical Assembly

1. Remove the protective film from both acrylic discs.
2. Mount the 5KG load cell between the two acrylic discs using the provided M3x10 screws and nylon guide columns. Ensure one end of the load cell is fixed by a screw hole, and the other end is left free to float, as indicated by the arrow on the load cell.
3. Attach the HX711 module to one of the acrylic discs, typically beneath the load cell, using appropriate mounting hardware (not explicitly detailed but implied by the kit components).

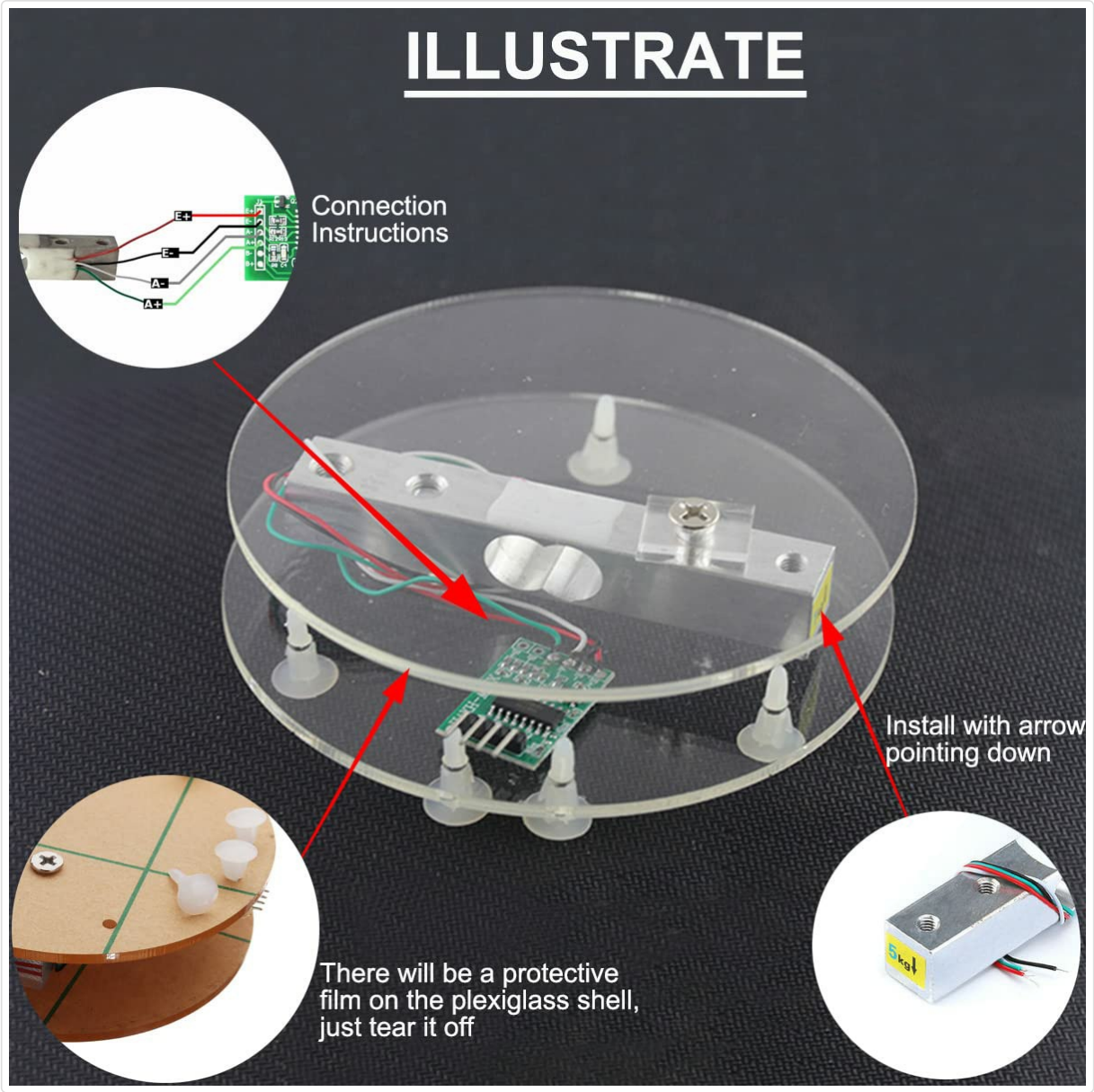

Figure 3: Assembly Illustration. This image demonstrates the physical assembly of the load cell and HX711 module using two acrylic discs, nylon guide columns, and M3x10 screws. It shows how the load cell is fixed between the discs and connected to the module.

4.2 Electrical Connections

Connect the 5KG load cell to the HX711 module using the 4-lead wires as follows:

- **Red wire** to E+ (Excitation+ on HX711)
- **Black wire** to E- (Excitation- on HX711)
- **Green wire** to A+ (Analog Input+ on HX711)
- **White wire** to A- (Analog Input- on HX711)

Connect the HX711 module to the Scale Display Module using the 4PIN Female-Female Dupont Cables. The connections are typically:

- HX711 GND to Display GND
- HX711 DT to Display DT
- HX711 SCK to Display SCK
- HX711 VCC to Display VCC

Finally, connect the 3.5mm x 1.35mm Power Cable to the Scale Display Module to provide power.

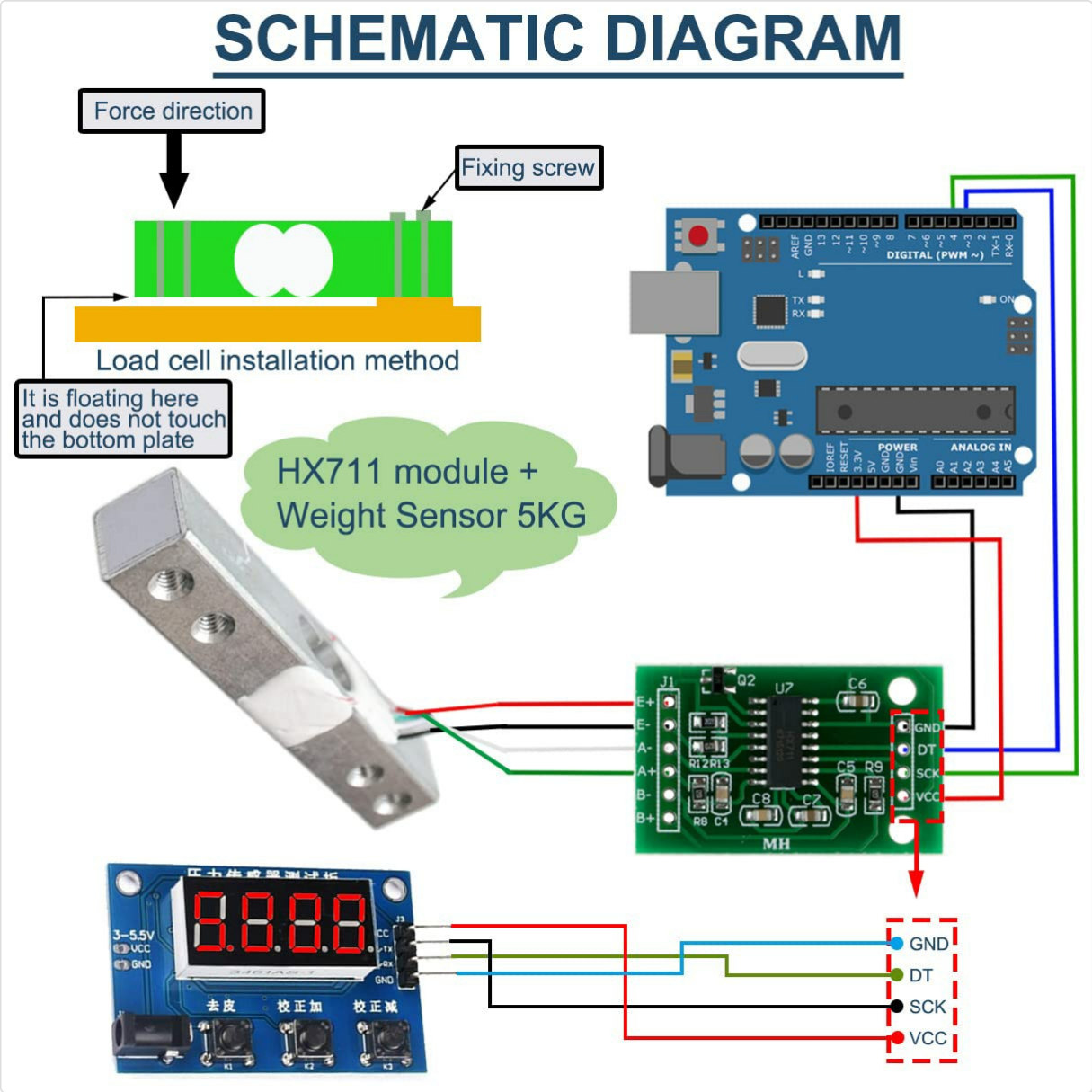

Figure 4: Detailed Wiring Diagram. A detailed wiring diagram showing the connections between the 5KG Weight Sensor, the HX711 module, and the Scale Display Module. It also illustrates the load cell installation method where one end is fixed and the other floats.

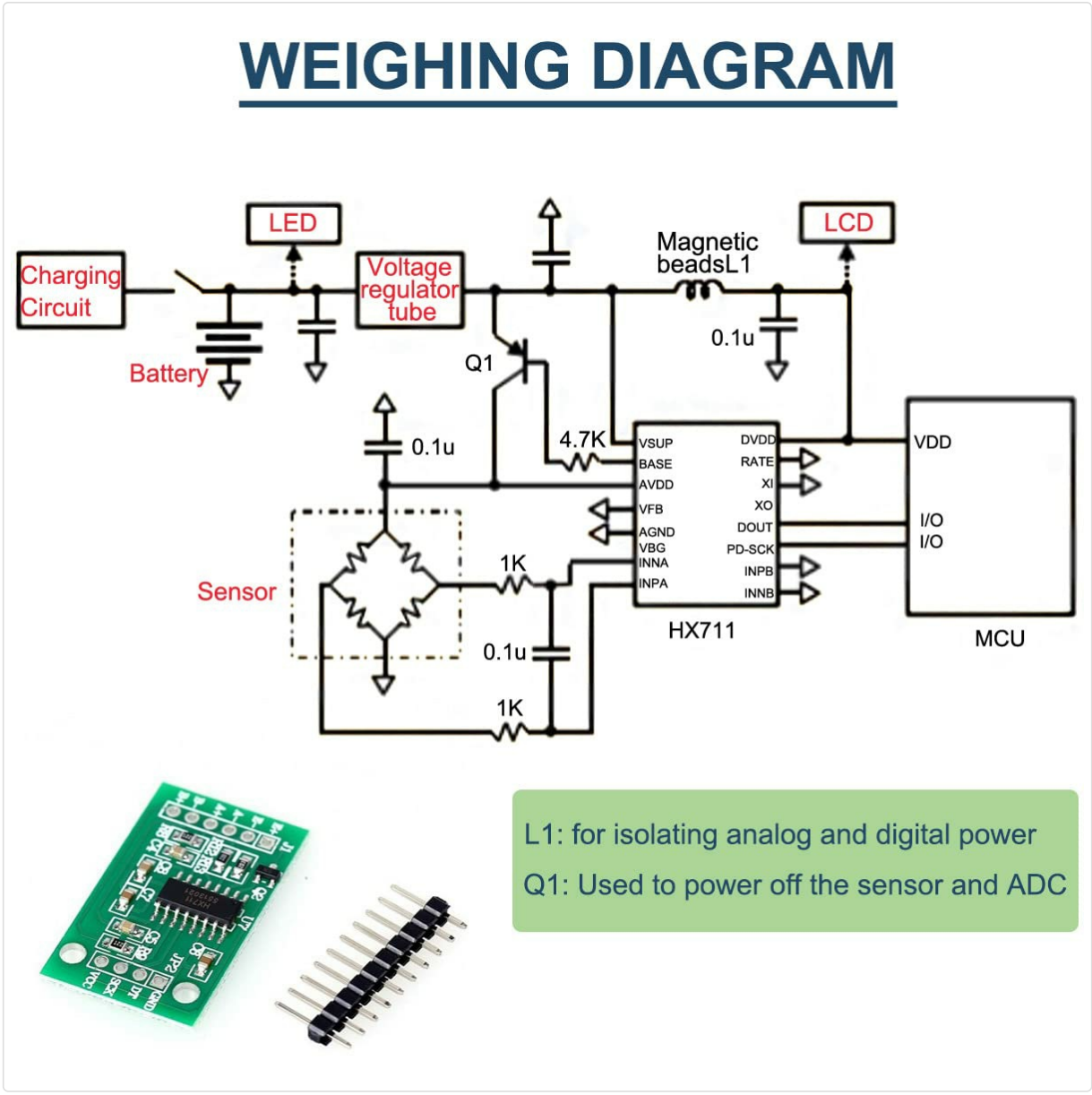

Figure 5: Weighing Circuit Diagram. A schematic diagram illustrating the connection of the load cell sensor to the HX711 module, and further to an MCU and LCD display, including voltage regulation components.

5. Calibration

The kit is not pre-calibrated and requires user calibration for accurate measurements. The display module typically has buttons for calibration. Refer to the specific instructions for your display module, but a general calibration process involves:

1. **Zero Calibration:** With no weight on the load cell, activate the zero calibration function on the display module. This sets the current reading as the zero point.
2. **Span Calibration:** Place a known weight (e.g., 1KG or 500g) on the load cell. Activate the span calibration function and input the value of the known weight into the display module. The module will then adjust its internal scaling factor.
3. Repeat span calibration with different known weights if necessary to ensure linearity across the desired measurement range.

Note: The exact button sequence and display prompts for calibration may vary. Consult the documentation specific to your scale display module for precise steps.

6. Operation

6.1 Basic Weighing

1. Ensure the scale is powered on and calibrated.
2. Place the item to be weighed gently on the load cell.
3. Read the weight displayed on the scale display module.

6.2 Tare Function

The tare function allows you to subtract the weight of a container, so only the contents are measured.

1. Place an empty container on the load cell.
2. Press the 'TARE' or 'ZERO' button on the display module. The display should reset to zero.
3. Add the items to be weighed into the container. The display will show only the net weight of the items.

7. Applications

This weight sensor kit is suitable for a variety of applications, including but not limited to:

- Human body electronic scales
- Experimental electronic scales
- Postal electronic scales
- Kitchen electronic scales
- DIY weighing projects with Arduino or other microcontrollers

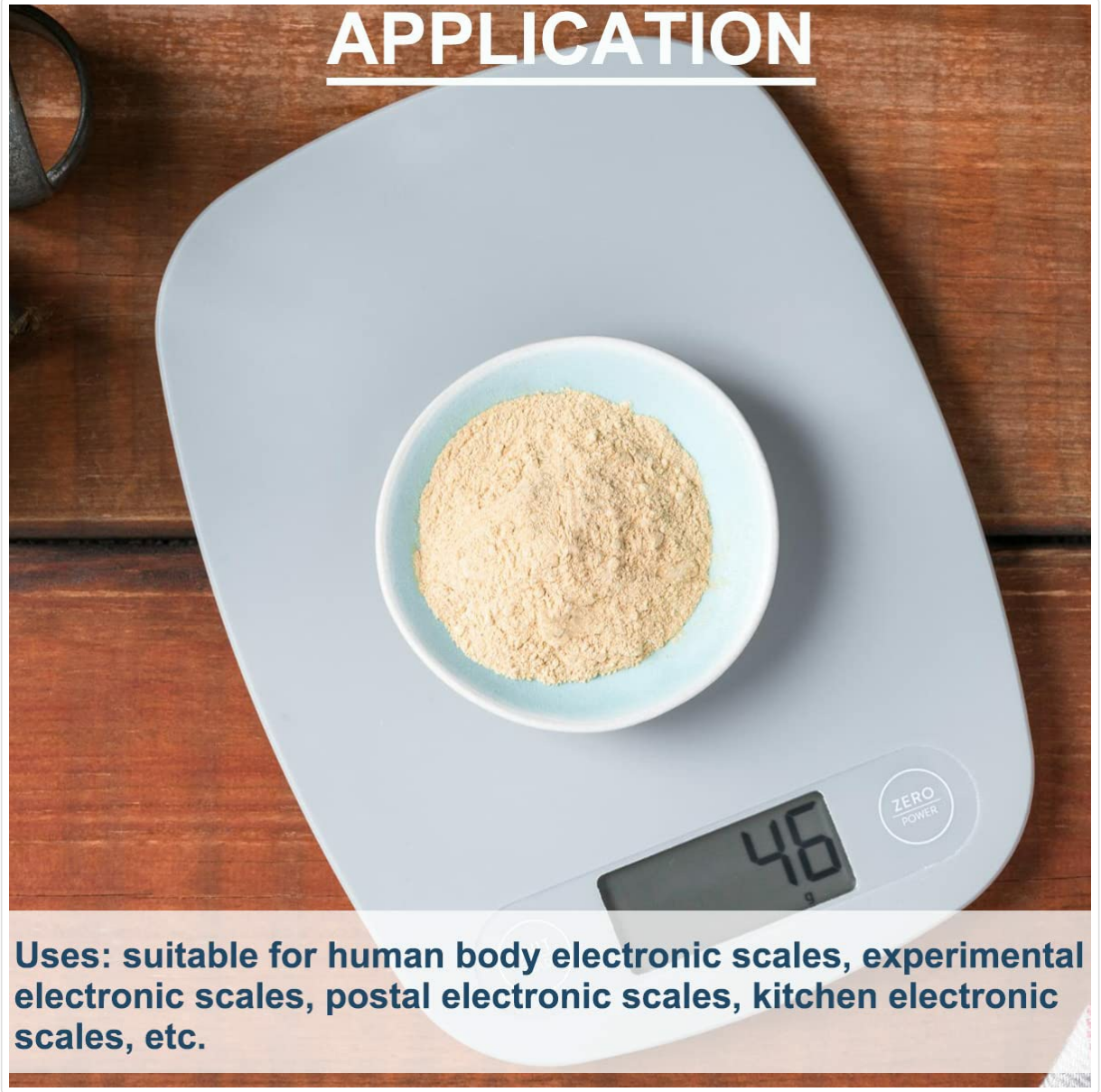

Figure 6: Application Example. An example image showing the assembled weight sensor kit integrated into a kitchen scale, demonstrating its practical application for measuring ingredients.

8. Specifications

Component	Specification
Brand	DAOKAI
Model Number	WE-DA-032
Weight Sensor Capacity	5KG
HX711 ADC Resolution	24-bit
Operating Voltage (HX711)	2.6V ~ 5.5V
Operating Temperature (HX711)	-20°C ~ +85°C
Output Data Rate (HX711)	10Hz or 80Hz (selectable)
Load Cell Drive Voltage	5-10V

Mounting Type	Screw Mount

9. Troubleshooting

- **No Reading / Erratic Readings:**
  - Check all wiring connections, especially between the load cell and HX711 module, and between HX711 and the display module. Ensure correct polarity (E+, E-, A+, A-).
  - Verify the power supply voltage is within the specified range (2.6V-5.5V for HX711, 5-10V for load cell).
  - Ensure the load cell is correctly mounted, with one end fixed and the other free to flex. Avoid direct pressure on the white latex part of the load cell.
  - Perform a full calibration procedure as described in Section 5.
- **Incorrect Weight Display:**
  - Recalibrate the scale using a known, accurate weight.
  - Ensure the load cell is not overloaded beyond its 5KG capacity.
  - Check for any physical obstructions preventing the load cell from flexing freely.
- **Display Not Lighting Up:**
  - Confirm the power cable is securely connected and receiving power.
  - Check the connections between the HX711 module and the display module.

10. Warranty and Support

For warranty information and technical support, please refer to the seller's policy or contact DAOKAI customer service directly. Keep your purchase receipt for any warranty claims.